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CATALOGUE

OF THE

MOLLUSCA

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

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PART I.

CEPHALOPODA ANTEPEDIA.

PRINTED BY ORDER OF THE TRUSTEES.

LONDON: 1849.

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LONDON:
SPOTTISWOODES and SHAW,
New-street-Square.

PREFACE.

The chief objects in forming the present Synoptical Catalogue have been, to exhibit at one view a complete list of all the specimens of Mollusca at present in the British Museum collection, and to furnish such an account of the species known to exist in other collections, but which are at present desiderata in the British Museum, as the materials at hand would permit me to compile, in order to enable travellers, collectors, and others, to assist in completing the national collection.

For this purpose, short descriptions have been given of all the genera and species of recent Mollusca at present known to exist in the different museums and private collections, and of the better-known fossil species of the various families.

At the end of each description is added an enumeration stating the state, age, country, or strata, and other peculiarities, of each specimen of the kind in the Museum collection; and, when the species is not at present in that collection, the museum in which it has been observed is often added after the general habitat or locality of the species. The different individuals of each species contained in the British Museum collection are indicated by the letters *a*, *b*, *c*, &c.

Those specimens which have been presented to the Museum have the name of the donor marked immediately after the

habitat. When there is no such indication, the specimens have been either purchased, or procured in exchange; and in this case, whenever the place or person from whom they have been received gives authenticity to the specimens, or adds any thing to their history, they are noted as being from such and such a collection or locality. Great attention has been paid to dates, and the generic and specific names which appear to possess priority in this respect have been adopted. Reference has also been made to the works in which the genera and species appear to have been first described or noticed.

Catalogues like the present can be little more than compilations, and I have freely availed myself of the labours of my predecessors in the same field; especially of those who have published monographs of the different groups: but the characters of the orders, families, minor groups, and species, have been compared and revised with the specimens. In this Part great use has been made of the researches of M. D'Orbigny, who, with the late Baron Férussac, has been for many years engaged in the study of these animals; and their works may be considered as the basis of this Part of the Catalogue.

J. E. GRAY.

12th February, 1849.

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INTRODUCTION.

Sub-Kingdom III. MOLLUSCA.

Body soft, fleshy, destitute both of any bony skeleton supporting jointed limbs, and of a hard ringed skin, or external skeleton. Generally elongate, walking on a single central foot or disk, and furnished with one or more pairs of organs on the head and sides. The nervous system consists of a number of medullary masses distributed to different parts of the body; one of the masses placed over the gullet, and enveloping it like a collar.

The body is furnished with a muscular coat, called a mantle, endued with a glairy humour, and generally furnished with a calcareous envelope called a shell, secreted by the mantle, and protecting the body, or the more vital organs of the animal.

There is generally a mantle on each side of the body, each furnished with a shell; but the shells on the two sides are often very differently sized, that on one of the sides is in some only rudimentary, and in others they both are wanting in the adult. Some animals which have two unequal valves in the fœtal, or very young, state, lose them when they grow up.

Mollia (sect. A. Exanguium) *Androv. de Moll.* 1618; not *Eichw.*
Mollusca seu Mollia (genus Exanguium) *Jonston, de Exang.* 1650.
Malacoderma *Rondel. Exang.*
Mollusca (ordo Vermium) *Linn. S.N.* ed. 10. 641. 652. 1758, ed. 12.; *Müller, Z. Dam. Prod.* 28. 1776; *Brug. E.M.* 1789.
Mollusca *Poli, Test. Sicul.* i. 25. 1791 (exclus. *Cirripodes*); *Cuvier, Tab. Elém.* 1798, *Anat. Comp.* 1800, *Règ. Anim.* ii. 1817, ed. 2. 1830 (excl. Cirrhopoda); *Lamck. Syst.* 50. 1801, *Phil. Zool.* i. 315. 1809; *Schwieger, Naturg.* 187. 612. 689. 1820.
Mollusca pars (Testacea) *Swainson, Malac.* 4, 5. 1840.
Mollusca and Conchifera *Lamck. Hist.* vi. 259. 1819.
Molluscitæ *Schloth. Petref.* 45. 1820.
Therozoa *Eichwald, Zool. Special.* i. 258. 1829.
Pænulata *Latr.*
Gangliata (Mollusca) *Fleming, Brit. Anim.* 224. 1828.

Ganglioneura *Rudolphi, Beitr. z. Anthrop.* 1812.
Malacosia *Rafinesque, Anal. Nat.* 40. 1815.
Apalosia *Rafinesque, Préc. Som.* 12. 1814.; *Anal. Nat.* 137. 1815.
Brachiopneusta *Fischer.*
Malacozoa (Les Malacozoaires) *Blainv. Journ. Phys.* 1816; *Man. Malac.* 362. 1825; *Bronn, Gesch. de Nat.* iii. 1847.
Malacozoaria *Blainv. Dict. Sci. Nat.* xxxii. 171. 1824.
Gasterozoa *Carus, Ueber Thierr.* 1826; *Oken, His.* 1828.
Dermatozoa *Fitzinger, Syst. Rept.* 8. 1843.
Mollusques or Malacozoaires *Blainv. Bull. Soc. Philom.* 1816, 12. 2.
Mollusca or Cyclogangliata *Grant, Outlines, Lectures*, 1833, 17.

Synopsis of the Classes.

A. *Animal crawling on a Foot placed under the Body.*—Pedifera.

I. Gasteropoda (*Gasteropodes*). Head distinct, furnished with eyes and tentacles, and usually protected by one large conical valve, the other being rudimentary or abortive.

II. Conchifera (*Conchifers*). Mouth placed between the gills; they and the body being enclosed between the two large leaves of the mantle, which are covered with two equal or subequal valves, united along the back by a cartilage.

B. *Animal destitute of a Foot, or with only a rudimentary one.*—Apoda.

III. Brachiopoda (*Brachiopodes*). Mouth placed at the base of two spirally twisted ciliated arms, between the two leaves of the mantle, which are covered with two separate shelly valves. They live attached to other marine bodies.

IV. Pteropoda (*Pteropodes*). Head prominent, with one or two pairs of fins on the side of the neck, by which they move about in the ocean. Body often covered with a thin, glossy, conoidal shell.

V. Cephalopoda (*Cephalopodes*). Head large, distinct, furnished with eight or ten or more arms, by means of which they head downwards.

CATALOGUE

OF

CEPHALOPODA.

Class IV. CEPHALOPODA.

Head large, separate from the body. Eyes large, complex, lateral. Ears developed. Mouth armed with two horny or shelly jaws, edged with fleshy lips, and surrounded by eight or ten fleshy arms, or numerous tentacles; and furnished with an entire or slit tube, or *siphuncle*, used in locomotion.

Body ovate, roundish, or cylindrical, open in front, containing the viscera and one or two pair of internal symmetrical gills; naked; surrounded by a thin shell, with a single cavity? or partly or entirely contained in last chamber of a chambered shell, furnished with a siphon passing from chamber to chamber.

Individual unisexual.

Animal free, walking on its head or swimming in the sea; propelled by the water from the siphon tube.

The water of respiration enters the large aperture in the front of the body, and is expelled through the siphuncle, carrying with it the fæces. The large nervous ganglion is contained in a cartilaginous case, sending fibres to all parts of the body.

Cephalopoda *Cuvier*, *Tab. Elém.* 1798, *Anat. Comp.* 1800, *Règne Anim.* 1817; *Férussac*, *Tab. Syst.* 18. 1819; *Lamck. Phil. Zool.* i. 322. 1809, *Ext. d. Cour.* 1812; *De Haan*, *Monog.* 1825; *Grant*, *Lect.* 1833; *D'Orbigny*, *Moll. Viv. et Fos.* i. 107. 1845; *Gray*, *Proc. Zool. Soc.* 1847, 264.; *Owen*, *Trans. Zool. Soc.* ii. 103. 1838.

Pterygiorum *Latr. Fam. Nat.* 153. 1825.

M. brachiata (pars) *Poli*, *Test. Sicil.*

Cryptodibranchiata *Blainv. Dict. Sci. Nat.* xxxii. 172. 1824; *Man. Malac.* 364. 1825.

Cryptodibranchia or Brachiocephala *Blainv.* 1814; *Dict. Sci. Nat.* xii. 88. 1818; *Menke, Syn.*
Antliobranchiophora *Gray, Lond. Med. Rep.* 1821.
Mollia *Eichwald.*
Cephadelia Cephalopodia *Rafin. Anal. Nat.* 138. 1815.

Synopsis of Orders.

Subclass I. *ANTEPEDIA.* — Body naked. Shell none, or internal. Head separate, with eight or ten fleshy arms furnished with cups. Gills two. Siphuncle entire. Foot none.

Order I. OCTOPIA.
Arms eight; Cups sessile, without any horny ring. No internal medial dorsal Shell. Eyes fixed in the skin.

Order II. SEPHINIA.
Arms ten, two longer; Cups peduncled, with a horny circle. Internal medial Shell. Eyes free in the orbit.

Subclass II. *POLARNAXIA.*—Body without fins, enclosed in the last chamber of a siphoned-chambered external hell. Head not separate from the body, with a great number of cylindrical annulated retractile tentacles, without cups. Gills four. Siphuncle slit. Foot-like appendage distinct.

ORDER III. NAUTILIA.

Subclass I. *ANTEPEDIA.*

Body naked. — *Shell* none, or internal. — *Foot* none.
Head separate, with eight or ten fleshy arms furnished with cups. — *Gills* two. — *Siphuncle* entire.

Cephalopoda nuda *Cuvier, Anat. Comp.* 1800; *Lamck. Ext. d. Cour.* 1812; *Schwieger, Naturg.* 1820.
Cephalopoda (testa nulla) *Lamck. Phil. Zool.* i. 322. 1809.
Cephalopoda libera *De Haan, Mon. Amm.* 1825.
Cephalopoda cryptodibranchia *D'Orb. Ann. Sci. Nat.* vii. 96. 1826; *Menke, Syn.* 1. 1828, ed. 2. 1. 1830; *Grant, Lect.* 1833.
Mol. Cephalorum natantium Sepiadæ *Flem. Brit. Anim.* 225. 1828.
Cephalopoda acetabulifera *Férus. & D'Orb. Hist. d. Céphal.* 1834; *D'Orb. Moll. Viv. et Fos.* i. 157. 1845.
Cryptodibranchia nuda *Blainv.* 1814; *Dict. Sci. Nat.* xii. 88. 1818.
Cryptodibranchiata *Blainv. Dict. Sci. Nat.* xxxii. 172. 1824.
Cephalopoda *Leach, Zool. Misc.* iii. 1817.

Cephalopoda dibranchia *Owen, Trans. Zool. Soc.* ii. 103. 1838.
C. dibranchiata *Gray, Proc. Zool. Soc.* 1847, 204.
Antliobrachiaphora, Anosteophora, et Sepiaphora *Gray, Lond. Med. Rep.* 1821.
C. antepedia *Rafin. Anal. Nat.* 139. 1815.

Order I. OCTOPIA.

Body short, rounded, united to the head by a broad cervical band. Sometimes ? covered with a thin single-chambered shell.
Head very large, with aquiferous opening; none on the gills or lips. Siphuncle without any internal valve. Eyes fixed, united to the skins, incapable of rotation. Buccal membrane none.
Arms eight, all sessile, without swimming membranes. Cups sessile, flat, and without any horny ring. Tentacular arms none.
No internal medial dorsal shell.
The front of the mantle is supported by a fleshy band or by fleshy buttons on the siphon (*apparatus of resistance*, D'Orb.), fitting into grooves on the inner side of the mantle.

Cephalopoda octopoda *Leach, Zool. Misc.* iii. 1817; *Férussac, Tab. Syst.* 18. 1821; *Gray, Proc. Zool. Soc.* 1847, 204.; *Latr. Fam. Nat.* 167. 1828.
Antliobrachiaphora, Anosteophora, *Gray, Lond. Med. Rep.* 1821.
Cryptodibranchiata octocera *Blainv. Dict. Sci. Nat.* xxxii. 1824; *Menke, Syn.* ed. 2. 1830.
Cephalopoda octopodæ *Menke, Syn.* 1. 1828.
C. octopoda *Gravenhorst, Thier.* 1845.
Octopodidæ *Gray, Proc. Zool. Soc.* 1847, 204.; *Cantr. Malac. Médit.* 13. 1841.
C. octopia and argonautea *Rafin. Anal. Nat.* 140. 1815.
C. octobrachides *Blainv.*
C. octoceres *Blainv.*

Synopsis of Families.

I. *Octopidæ.* Arms subulate. Mantle supported by fleshy bands. No cephalic aquiferous apertures.

II. *Philonexidæ.* Arms subulate. Mantle supported by two buttons at the base of the siphuncle, fitting into grooves on the mantle.

III. *Ocythoidæ.* Arms subulate, two upper palmate. Mantle supported by two buttons fitting into grooves on the base of the siphuncle.

Fam. I. OCTOPIDÆ.

Body united to the head in front by a medial fleshy band.
Head without any aquiferous opening. Arms conical, tapering, with short sessile cups. No external nor internal medial shell.
Living near the shores amongst rocks.

Acochlides *Latr. Fam. Nat.* 168. 1828.
Octopidæ *D'Orb. Moll. Viv. et Fos.* i. 159. 164. 1845.
Octopodina *Gray, Proc. Zool. Soc.* 1847, 205.

Synopsis of the Genera.

1. Octopus. Arms with two rows of cups. Body round, without fins. No aquiferous Cells between the bases of the arms.
2. Cistopus. Arms with two rows of cups. Body round, without fins. Distinct aquiferous Cells between the bases of the arms.
3. Pinnotopus. Arms with two rows of cups. Body with fins.
4. Eledone. Arms with one row of cups; without beards, and united by a short web. Body round.
5. Cirroteuthis. Arms with one row of cups, bearded, and united by a broad web. Body finned.

A. *Arms with two Rows of Cups.*

1. OCTOPUS.

Body small, round, without any lateral fins, often cirrose. Cirri often nearly disappearing in repose, and when preserved in spirits.—*Head* with two small internal cartilages, one on each side of the beak; in the direction of the body (not oblique), narrower than the body. Eyes small, lateral, covered by the continuation of the surrounding skin, and often by one or two transparent eyelids. Beak very much compressed. External ear slightly marked above the cervical band. No aquiferous cells between the bases of the arms.—*Arms* unequal, elongate, united at the base by a web, which is wider beneath. Cups sessile, two-rowed, flat.—*Siphuncle* elongate, conical, slender, without any superior bands, or valve.—Living on rocks on the coast, very agile, eating crustacea, and changing their colour rapidly. Egg transparent, in bunches attached to *Algæ*.

Πολυπους *Aristoteles.*
Polypus *Plinius, Belon, Rodeletius.*

Sepia sp. *Linnæus*, *Gmelin*, 1797.
Octopus *Cuvier*, *Règ. Anim.* ii. 1817; *Lamarck*, 1799; *Blainville*, *Malac.* 1825; *D'Orb. Moll. Viv. et Fos.* i. 163. t. 1.
Polypus *Leach*, *Zool. Misc.* 1817.

The species are generally uniformly coloured or mottled. *O. horridus* n. 12. and *O. lunulatus* n. 16. are marked with distinct spots. *O. membranaceus* n. 22. and *O. ocellatus* n. 26. have a large eyed spot between the bases of the lateral arms.

M. D'Orbigny divides the species thus:—

a. Upper Arms the longest.—O. Cuvieri, O. indicus, O. breviceps

b. Lateral Arms the longest.—O. vulgaris, O. tuberculatus, O. brevitentaculatus, O. superciliosus, O. tetracirrhus, O. membranaceus.

c. Lower Arms the longest.—O. rugosus, O. aculeatus, O. lunulatus, O. Fontainianus, O. tchuelchus, O. horridus, O. aranea.

d. Doubtful Species.—O. venustus, O. didynamus, O. Peronii, O. granosus, O. sinensis, O. tetradynamus, O. Boscii, O. pilosus, O. heteropodus, O. areolatus, O. frayedus, O. cærulescens, O. Tang Siao.

e. Apocryphal Species.—O. colossus.

Synopsis of the Sections of the Genus.

§ The Cups of the Arms subequal, regular.
  * The lower Cups far apart, in one series.
    † Body smooth, bearded.
    †† Body smooth, not bearded.
    ††† Back slightly granular.
    †††† Back granular, rough.
  ** The lower Cups rather crowded.
    † Body smooth, not bearded.
    †† Body bearded.
    ††† Body minutely granular.
    †††† Body granular, rough.

2 § The Cups of the dorsal Pair of Arms largest.

3 § The seventh to the twentieth Cups of the lateral (second and third) Pairs of Arms much larger than the rest.

4 § Cups ending in a Point, not clawed.

5 § Species requiring further Examination.

6 § Apocryphal species.

§ *The Cups of the Arms equal, similar.*

* *The lower Cups far apart, one-rowed.*

† *Body smooth, bearded.*

1. Octopus vulgaris.

Body small, oval, warty, cirrose; dorsal beards placed in a rhomb. Head warty; ocular beards three. Arms very large, elongate, unequal, the order of their length being 3, 2, 4, 1. Cups far apart, large, near the mouth one-rowed. Web large.—Reddish, whitish beneath.

Πολυπους *Aristoteles*, lib. iv. cap. i.; *Camus*, p. 177.; *Schneid.* ii. p. 130. 15.

Polypus *Salvianus de Aquatil.* 160.; *Gesner de Aquatil.* lib. iv. 870.

Polypus marinus, seu Octopus Karakatiza *Kölreuter, Nov. Comm. Acad. Petrop.* vii. 321. t. 11. f. 1, 2.

Polypus octopodia *Leach, Journ. de Phys.* lxxxvi. 394.; *Savigny, Desc. de l'Egypt. Hist. Nat.* ii. t. 1. f. 1.

Octopodia *Hasselquist, Acta Upsal.* 33. 1750.

Octopus vulgaris *Lamck. Mém. de la Soc. d'Hist. Nat. de Paris*, i. 18., *Hist. An. sans Vert.* 2nd edit. vii. 657. n. 1.; *Carus, Icon. Sep.* in *Nov. Act. Acad. Nat. Cur.* xii. 1. part. xxxi. 319.; *D'Orbigny, Tab. des Céph.* 52. p. 1.; *Blainville, Dict. des Sci. Nat.* xliii. 188.; *Risso, Hist. Nat. del Eur. Mer.* iv. 3. p. 2.; *Blainville, Faun. Franç. Moll.* 5. t. 1. f. 1.?; *Payraudeau, Catal.* 172. n. 350.?; *Audouin, Expl. des Planch. de Sav.* texte i. 9. in 8vo p. 22.; *Delle Chiaje, Mem.* iv. 40. and 55. t. 56. f. 13.; *Wagner, Zeitschr. für die Org. Phys.* ii. 22.; *Bull. Univ. des Sc. Nat.* xix. 387.; *Sangiovani, Ann. des Sc. Nat.* xvi. 321.; *Philippi, Enum. Moll. Sic.* 240. n. 1.; *Rang, Mag. de Zool.* 62.?; *Règne An. de Cuv. Ill.* t. 1.; *D'Orbigny et Férussac, Mon. des Céph. Acét. Poulpes*, t. 2, 3. 3 bis, 8. 11, 12, 13, 14, 15, 29. p. 27.; *D'Orbigny, Moll. des Canaries*, 14. n. 1., *Moll. des Antilles*, 11. t. 1., *Moll. Viv. et Fos.* i. 168. n. 1. t. 1. f. 7—9.; *Potiez et Michaud, Gall. des Moll. de Douai*, i. 6. n. 1.; *Bouch. Chant. Cat. des Moll. Mar.* 69. n. 122.

Sepia Octopus *Bosc, Buff. de Deterville, Vers.* i. 47.

Poulpe commun *Montfort, Buff. de Sonnini Moll.* ii. 103. t. 22. 24.? and 113. t. 23, 24, 25.?; *Shaw, Natur. Miscell.* xviii. 780.

Poulpe fraisé *Montfort, Buff. de Sonnini*, iii. 5. t. 27. 28.

Le Poulpe *Cuvier, Mém. sur les Céph.* t. 1—4.

Octopus appendiculatus *Blainville, Dict. des Sc. Nat.* xliii. 188.

Octopus Salutii *Verany, Mem. del Acad. Torino*, i. t. 3.

Octopus unicirrhus *Delle Chiaje, D'Orb. et Féruss. Mém. des Céph. Acét.* 73.

Hab. Atlantic Ocean, Mediterranean, Indian Ocean, Red Sea.

a. Yarmouth. Adult. In spirits.

†† *Body smooth, not bearded.*

2. OCTOPUS ÆGINA.

Body oblong, elongated, smooth, marbled, not bearded. Nape, eyes, and back of head smooth. Eyes very prominent. Arms rather elongate; proportionate length, 4, 3, 2, 1. Web short, rather wider below, smooth above. Cups rather large and rather far apart, equal; the five or six lower ones far apart, and in a single series.

Hab. ————.

a. ———— ? In spirits ————.

3. OCTOPUS ARANEA.

Body oblong, short, smooth. Head short, narrow, very smooth; ocular beards one, posterior. Arms much elongated, smooth, slender very unequal; order of their length, 4, 3, 2, 1. Cups small, close, numerous; about 180 on the longest arms; the four nearest the mouth in a single line. Web short.—In spirit blackish, colouring dots very small.

Octopus aranea *D'Orb. Poulpes*, t. 5. 1825; *D'Orb. et Féruss. Mém. des Céph. Acét.* 57., *Poulpes*, t. 5.; *D'Orb. Moll. Viv. et Fos.* i. 184. p. 23.

Octopus filamentosus *Blainv. Dict. des Sc. Nat.* xliii. 188. 1826.

Hab. Isle of France.

††† *Back slightly granular.*

4. OCTOPUS GERYONEA.

Body (in spirits) marbled, smooth. Head and base of the arms very minutely granular. Eyes with one fleshy tubercle, and one behind the eye; upper eyelid rugose. Arms moderate, very thick at the base; proportionate length, 3, 4, 2, 1. Web broad, upper surface finely granulated. Cups large, subequal; the three or four lowest rather distant, and one-rowed.

Hab. Coast of Brazils.

a. Bahia. In spirits.

5. Octopus Hardwickei.

Body roundish, oblong. Middle of the back, back of the head, and the eyelids warty. Ocular tentacles none; eyelid smooth. Arms moderate, rather slender; proportionate length, 4, 3, 2, 1. Cups rather large; the five or six lowest rather far apart, one-rowed. Web rather broad, quite smooth above.

Octopus Hardwickei *Gray*, *Brit. Mus.* 1826.

Hab. Indian Ocean.

a, *b*. Singapore? In spirits. Captain Hay's Collection.

†††† *Body granular.*

6. Octopus rugosus.

Body oval, purse-shaped, large, with a deep groove above. Head and arms and upper part of body covered with roundish tubercles, not bearded. Head short, warty; ocular beard one, elongated. Arms short, thick, conical; the order of the length is 4, 3, 2, 1. Cups large, of upper part of arm rather smaller, lowest one-rowed. Web short.—When alive, violet-brown, white beneath: side of the arms netted with brown lines.

Polypus mas *Seba*, *Thes.* iii. t. 2. f. 2, 3 ?, 1758.
Octopus *Barker*, *Phil. Trans.* l. 777. t. 29. f. 1—4.; *Bruguière*, *Encyc. Méth.* t. 76. f. 1, 2.; *Shaw*, *Miscell.* x. 359.
Le Poulpe granuleux *Montfort*, *Buff. de Sonnini Moll.* iii. 30. t. 29.
Le Poulpe Américain de Barker *Montfort*, *Buff. de Sonn.* iii. 38. t. 30. 1802.
Sepia rugosa *Bosc*, *Act. de la Soc. d'Hist. Nat.* t. 5. f. 1, 2. 1792.
Sepia granulosa *Bosc*, *Buff. de Deterville Vers.* i. 47. 1802.
Octopus granulatus *Lamarck*, *Mém. de la Soc. d'Hist. Nat. de Paris*, i. 20. p. 2. 1799; *Hist. An. s. Vert.* vii. 658.; *Férussac*, *D'Orb. Tab. des Céphal.* 53. n. 2.; *Blainv. Dict. des Sc. Nat.* xliii. 185.; *Philippi*, *Enum. Sicil.* 241. n. 3.
Octopus Barkerii *Férussac*, *D'Orb. Tab. des Céph.* 54. n. 3. 1826.
Octopus americanus *Blainv. Dict. des Sc. Nat.* xliii. 189. 1826.
Octopus rugosus *Blainv. Dict. Sc. Nat.* xliii. 185. 1826; *D'Orbigny et Férussac*, *Mém. des Céphal. Acét.* 45., *Poulpes*, t. 6. p. 23.; *D'Orbigny*, *Moll. des Antilles*, i. 18., *Moll. Viv. et Fos.* i. 171. n. 3.

Hab. Atlantic Ocean, Indian Ocean.

a. Valparaiso. In spirits. Mr. Bridges's Collection. The fourth, or lower, pair of arms rather shorter than the third pair.

** *Lower Cups crowded.*

† *Body smooth, not bearded.*

7. Octopus Favonia.

Body (in spirits) oblong, smooth, without any beards. Eyes without beards. Arms moderate, conical; relative length, 3, 2, 1, 4. Webs moderate, with hard transparent granulations above, especially between the dorsal arms. Cups similar, subequal, large; the two or three lowest one-rowed.

O. Indicus *Gray, Brit. Mus.* 1830; not D'Orb.

Hab. Indian Ocean.

a. Singapore. In spirits. Presented by General Hardwicke.

8. Octopus Eudora.

Body smooth. Ocular tentacles none. Arms rather short, subquadrangular, not fringed on the outer edge; relative length, 2, 3, 4, 1; three upper pairs subequal. Web short, rather broader below. Cups moderate, subequal, regular; one or two lowest near mouth one-rowed.

Hab. Atlantic Ocean.

a, b. Jamaica. In spirits. Mr. Gosse's Collection.

9. Octopus Tchuelchus.

Body round, short, smooth. Head smooth. Arms elongated, compressed, nearly equal; the order of their length, 4, 1, 3, 2. Cups about a hundred on the longest arms. Web thin. Siphuncle elongate, narrow. — When alive blackish brown, whitish beneath

Octopus Tchuelchus *D'Orb. Voy. dans l'Amér. Mér.* v., *Moll.* 27. t. 1. f. 6, 7. 1835; *D'Orb. et Féruss. Mém. des Céph. Acétab.* 55., *Poulpes*, t. 17., *Moll. Viv. et Fos.* i. 172. n. 4.

Hab. Atlantic Ocean, Patagonia. *D'Orb.*

10. Octopus Cassiopea.

Body (in spirits) smooth, oblong, moderately long. Ocular beard one, conical, medial, posterior. Arms moderate, rather thick at the base; proportionate length, 2, 3, 4, 1. Web short, rather broader beneath, smooth above. Cups moderate, subequal; of the third pair of arms rather the largest.

Hab. Mediterranean.

a. Marseilles. In spirits. Presented by J. Ritchie, Esq.

11. Octopus brevipes.

Body oblong, large, smooth. Head short, broad. Eyes prominent, without eyelids. Arms conical, very short, nearly equal, about one third the length of the animal; upper pair rather longest. — Bluish, with red spots. Eyes silvery, with a blue spot above them. Perhaps young. *D'Orb.*

Octopus brevipes *D'Orbigny, Voy. dans l'Amér. Mér. Moll.* 22. t. 1. f. 1—3.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 61., *Poulpes*, t. 17. f. 1.; *D'Orbigny, Moll. Viv. et Fos.* i. 174. n. 6.

Hab. Atlantic Ocean.

†† *Body bearded.*

12. Octopus horridus.

Body short, smooth, round, with numerous regularly placed diverging beards. Head short, with diverging beards round the eyes. Arms short, thick, five or six bearded externally, nearly equal, conico-subulate; order of length, 4, 3, 2, 1. Cups rather large, subequal; one or two lowest, especially of the second pair of dorsal arms, one-rowed. Web moderate, extending up the outer edge of the arms. — Bluish? when alive, with large regular round white spots (seen also when in spirits).

Octopus horridus *D'Orbigny, Sav. Descr. de l'Egypte, Atlas, Céphal.* t. 1. f. 2.; *D'Orbigny, Tab. des Céph.* 54. n. 4.; *Audouin, Explicat. des Planches de Sav.* 3. p. 2.; *Ehrenberg, Cephalopoda, Octopus*, n. 2.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 51., *Poulpes*, t. 7. f. 3.; *D'Orbigny, Moll. Viv. et Fos.* i. 178. n. 15.

O. fimbriatus *Rüppell, MS.* (in Brit. Mus.); *D'Orb. et Férussac, Céph. Acét.* 64., *Moll. Viv. et Fos.* i. 179. n. 16.

O. Argus *Krauss, Sud-Afr. Moll.* 132. t. 6. f. 28.

Hab. Red Sea.

a. Red Sea. In spirits. From Dr. Edward Rüppell's Collection, as "O. fimbriatus *Rüppell.*"

13. Octopus aculeatus.

Body short, rounded, small, covered near the head with numerous beards. Head longly bearded; beards crowded, forming a circle round the eyes. Arms thick, elongated, bearded externally, unequal; order of length, 4, 2, 3, 1. Cups very large and very numerous. Web short. — When alive, whitish.

Octopus aculeatus *D'Orb. Tab. des Céph. Poulpes*, t. 7. 1823; *D'Orb. et Férussac, Mon. des Céph. Acét.* 53., *Poulpes*, t. 7, 8. 23.; *D'Orb. Moll. Viv. et Fos.* i. 183. n. 21.

Octopus niveus *Féruss. D'Orb. Tab. Méthod. des Céph.* 54. 1826; *Lesson, Voy. de la Coquille, Zool.* ii. part 1. 239. t. 1. f. 1. 1 bis.

Hab. Manilla and Borapora.

††† *Body minutely granular.*

14. Octopus Saphenia.

Body and arms minutely granular. Ocular beards none. Arms moderate; comparative length, 2, 3, 4, 1; three upper pairs subequal. Web short, granular above. Cups subequal.

Hab. Pacific Ocean.

a. East coast of South America. In spirits. Presented by the Rev. W. Hennah.

15. Octopus Berenice.

Body (in spirits) oblong. Head and base of the arms and back of the body minutely granular, and with regularly disposed roundish groups of small granules. Eyes with four or five granulated tubercles on the dorsal edges, forming a fringe. Arms moderate; relative length, 2, 3, 4, 1. Cups very large, subequal. Web moderate, rather wider below.

Hab. ————

a. ————? In spirits. Presented by Mr. John Leadbeater, 1805.

16. Octopus lunulatus.

Body short, covered with scattered tubercles, and about twenty rounded prominent circles with concave centres, in six series. Head short, thick, tubercular, with one medial and two lateral convex circles, with a tubercle in the centre. Arms short, conical, nearly equal; order of their length, 4, 3, 2, 1; with a circle between the bases of the arms. Cups about fifty. Web very short. — When alive, white, varied with blue circular spots paler in the centre.

Octopus lunulatus *Quoy & Gaimard, Zool. du Voy. de l'Ast.* ii. 86. t. 6. f. 1, 2.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 59. *Poulpes*, t. 10. 26.; *D'Orbigny, Moll. Viv. et Fos.* i. 182. n. 20.

Hab. New Zealand.

17. Octopus tetracirrhus.

Body oval, slightly granular, with a posterior beard. Ocular cirrhi two, anterior and posterior. Arms short, rather unequal in length; in order, 2, 3, 1, 4. Web very broad. Cups in two lines; the first three round the mouth in one line. — Yellowish when alive.

Octopus tetracirrhus *Delle Chiaje Moll. MS.; D'Orbigny et Férussac, Mon. des Céph. Acét.* 36. n. 5., *Poulpes*, t. 22.; *D'Orbigny, Moll. Viv. et Fos.* i. 175. n. 8.

Hab. Mediterranean.

18. Octopus superciliosus.

Body oval, acuminated behind, slightly granular, longly bearded; one beard being posterior, seven or eight on the back, and some in two lines on the sides, forming a kind of crest which is sometimes indistinct. Head very distinct, swollen, smooth in the middle, with some tubercles over the eyes. Arms elongated, angular, conical, nearly equal; order of their length, 2, 4, 3, 1. Cups far apart, large; beak without lateral wings.—When alive, white.

Octopus superciliosus *Quoy & Gaim. Zool. du Voy. de l'Ast.* ii. 28. t. 6. f. 4. 1832; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 41., *Poulpes*, t. 10. 28.; *D'Orbigny, Moll. Viv. et Fos.* i. 180. n. 18.

Hab. Bass's Straits, Australia.

†††† *Body granular, rough.*

19. Octopus Boscii.

Body roundish; back of head and arms closely acutely granulated; back with a few regularly placed larger tubercles. Eyes with three conical beards. Arms elongate, granulated, without any beards externally; the upper pair with a very wide dorsal membrane, the other with a narrow one arising from the outer side. Cups in two regular marginal series. Web moderate, granulated above.

Sepia rugosa *Péron, MS.*

Octopus Boscii *LeSueur, Journ. Acad. Nat. Sci. Philad.* ii. 101. 1822.; *D'Orb. et Férussac, Mon. des Céph. Acét.* 68.; *D'Orbigny, Moll. Viv. et Fos.* i. 186. n. 26.

Octopus variolatus *Péron, Blainv. Dict. Sc. Nat.* xliii. 186. 1826.

Hab. New Holland.

a. New Holland.? In spirits. Presented by J. B. Jukes, Esq.

20. Octopus tuberculatus.

Body short, round, covered with irregular papillary granular warts; back with four conical, acute, diverging beards. Head short, warty; ocular beards two, the hinder elongated. Arms granular, cirrose, short, unequal; the order in length of the arms is

2, 3, 4, 1, or 3, 2, 4, 1. Cups very large, the first three in one line. Web rather wide, granulated above, extending up the outer side of the arms, especially of the second and third pairs. —Violet brown, beneath white.

Octopus tuberculatus *Blainville, Dict. des Sc, Nat.* 1826, p. 6. t. 1. f. 3.; *Faun. Franç. Moll.* 8. t. 1. f. 3.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 38., *Poulpes*, t. 21. 23. p. 38.; *D'Orbigny, Moll. des Antilles*, 15. n. 2., *Moll. Viv. et Fos.* i. 170. t. 1.

Octopus ruber *Rafinesque, Précis des Découv. Somiol.* 28. n. 70.?

Hab. Atlantic Ocean, Mediterranean.

a. Pacific Ocean. In spirits. ——————— ?

21. Octopus polyzenia.

Body oblong, rounded, short. Head, back of the dorsal arms, and back of body granular, and with a few scattered warts or short beards. Arms slender, outer edge of ventral arms smooth; comparative length, 4, 3, 2, 1. Web short, rather wider below. Cups large, subequal.

Hab. Australian seas.

a. Port Essington. In spirits. Presented by the Earl of Derby.

22. Octopus membranaceus.

Body obtuse, granular, provided with a lateral membrane. Head large; ocular beards three, elongate, granular above and below. Arms short, unequal, quadrangular; order of their length, 2, 3, 4, 1. Cups large. Web short, granular.—When alive, white, with a black eyed spot between the bases of the second and third pairs of arms.

Octopus membranaceus *Quoy & Gaim. Zool. de Voy. de l'Ast.* ii. 89. t. 6. f. 5.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 43. *Poulpes*, t. 10. 28.; *D'Orbigny, Moll. Viv. et Fos.* i. 181. n. 19.

Hab. New Guinea.

2 § *Cups of the dorsal Pair of Arms larger than the rest.*

23. Octopus Cuvieri.

Body oblong, enlarged below, warty above, and with a medial posterior beard; aperture of moderate size. Ocular beards indistinct. Arms very long, slender, unequal; order of length, 1, 2, 3, 4; first and third much longest. Web broad. Cups elevated. some on the two upper pair of arms larger.

Octopus Cuvieri *D'Orb. Tab. des Céph. Poulpes;* t. 4. 1835, *Moll. des Canaries*, 16. n. 2., *Moll. Viv. et Fos.* i. 173. n. 5.; *D'Orb. et Féruss. Mon. des Céph. Acét. Poulpes*, t. 1. 4. 24. 27. p. 18.; *Guérin, Icon. de Règ. Anim. Moll.* t. 1. f. 1.

Octopus Lechenaultii *D'Orb. Tab. des Céph. Poulpes*, t. 1. 1825.

Octopus macropus *Risso, Hist. Nat. del Eur. Merid.* iv. 3. n. 3. 1826; *Delle Chiaje, Mem.* iv. 40. 56. p. 2. t. 54. p. 26. 1828; *Blainv. Faun. Franç. Moll.* 6. n. 2.; *Wagner, Zeitschr. für die Organ. physik.* ii. 225.; *Bullet. des Sc. Nat.* xix. 387. n. 1.; *Rang, Mag. de Zool.* 61. t. 90.; *Philippi, Enum. Moll. Sic.* 240. n. 2.

Octopus macropodus *Sangiovani, Ann. Sc. Nat.* xvi. 319. 1829; *Bullet. des Sc. Nat.* xx. 338.

Octopus longimanus *Féruss. MS.*

Hab. Atlantic Ocean, Mediterranean, Indian Ocean, Red Sea.

24. Octopus medoria.

Body, head, and base of arms minutely granular, with scattered rather larger rounded tubercles. Body oblong, rather acute behind. Eyes large; ocular tentacles none. Arms elongate, slender; comparative length, 1, 3, 4, 2. Cups rather small, regular, equal, of the dorsal pair rather largest. Web moderate, scarcely wider beneath, smooth above.

Hab. ——— ?

a. ——— ? In spirits. The left dorsal arm not fully developed, and with small cups like the other arms. Somewhat like *O. Cuvieri* Féruss. *Céphal.* t. 4.

3 § *A Few of the Cups near the Base of the second and third Pairs of Arms much larger than the rest.*

25. Octopus Fontanianus.

Body large, oval, slightly warty; aperture broad. Head narrow, nearly smooth; ocular beards one, posterior. Arms moderate size, angular, subequal; the inferior pair longest. Cups close together, subequal, gradually diminishing in size; the seventh to the tenth cups of the second and third pairs of arms much largest. Web very broad.—When alive, violet, deeper above.

Sepia Octopus *Molina, Hist. Nat. du Chili*, p. 173.?

Octopus Fontanianus *D'Orbigny, Voy. dans l'Amér. Mérid. Moll.* 28. t. 2. f. 5.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 49., *Poulpes*, t. 28, 29.; *D'Orbigny, Moll. Viv. et Fos.* i. 179. n. 17.

Hab. Pacific Ocean, coasts of Chili and Peru.

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26. Octopus ocellatus.

Body roundish, oblong; back of head and outside of the arms regularly granular; eyes and head without any cirri; beneath smoothish, sides rounded. Arms moderate, unequal. The fourth or fifth cups of the second and third pairs of arms much larger than the rest.—A large black eyed spot between the bases of the second and third pairs of arms.

Octopus ocellatus *D'Orb. & Férussac, Mém. Céph. Acét. Poulpes*, t. 9. upper figure, from Chinese drawing.

Hab. Chinese seas.

a. China. In spirits. Presented by John Reeves, Esq.

27. Octopus Cephea.

Body (in spirits) smooth, oblong, rather elongate. Head smooth; ocular beard small, surrounded by other smaller beards. Arms thick, moderately long; proportionate length, 3, 2, 4, 1. Web broad, broader in front, upper surface quite smooth. Cups very large; the tenth to the twentieth cups of the second and third pairs of arms larger, equal; the four or five lowest of all the arms one-rowed.

Hab. ————.

a. ————. In spirits. ————

Very like *O. vulgaris*, but differs in the size of the cups on the lateral arms.

28. Octopus Cyanea.

Body (in spirits) ovate, above rather granular, beneath smooth. Ocular tubercle rugose, superior. Arms rather elongate, conical; order of length, 2, 4, 3, 1. Cups large; the tenth to the twentieth of the second and third pairs of arms larger, equal-sized; the lowest, especially of the ventral arms, one-rowed. Web broad, minutely granular above, especially between the upper arms.

Hab. Australian seas.

a. Coast of New Holland. In spirits. Presented by J. B. Jukes, Esq.

b.? ———— ? In spirits ?

4 § "*Cups ending in a Point, not clawed.*"

29. Octopus cærulescens.

Body short. Arms much longer than the body. Cups ending in a point, but not clawed.—Blue, varied with very small close purple dots. Cups whitish. *Blainv.*

Octopus cærulescens *Péron, Blainv. Dict. des Sc. Nat.* xlii. 129. 1826; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 65.; *D'Orbigny, Moll. Viv. et Fos.* i. 185. n. 24.

Hab. New Holland, Island of Dorre. *Péron.*

The form of the cups, if correct, would indicate a different family.

5 § Species requiring further Examination.

30. Octopus longipes.

Body elongated, oval, glabrous, grey spotted with black. Arms very long, slender. Cups large, rather prominent.

Octopus longipes *Leach, Zool. Miscell.* iii. 137. 1817; *Férussac, D'Orb. Tab. des Céph. Ann. Sc. Nat.* 54. n. 6.; *Blainville, Dict. des Sc. Nat.* xliii. 189.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 67., *Moll. Viv. et Fos.* i. 187. n. 31.

Polypus longipes *Leach, Journ. de Phys.* lxxxvi. 394. 1818.

Hab. ——— ? Mus. Oxford. Probably *O. Cuvieri* or *O. aranea* D'Orbigny.

31. Octopus brevitentaculatus.

Body (in spirits) short, globular, smooth, not tubercled. Arms thick, cirrous, conical, short; proportion of length, 2, 3, 4, 1; the longest only three times as long as the head. Cups large.

Octopus brevitentaculatus *Blainv. Dict. Sc. Nat.* xliii. 187.; *D'Orbigny, Mon. des Céph. Acét.* 36. n. 4., *Moll. Viv. et Fos.* i. 186. n. 30.

O. vulgaris contracted *D'Orb. Moll. Viv. et Fos.* i. 187.

Hab. ———. Mus. Paris, three specimens.

32. Octopus venustus.

Body oval, purse-formed, smooth; aperture large. Head short, rather broad; eyes prominent. Arms rather short, nearly equal. Cups small. *Rang.*

Octopus venustus *Rang, Moll. MSS.; D'Orbigny et Férussac, Mém. des Céph. Acét.* 64., *Poulpes*, t. 21. f. 8, 9. 1838; *D'Orbigny, Moll. Viv. et Fos.* i. 175. n. 7.

Hab. Atlantic Ocean, Goree.

"Perhaps from a young specimen." *D'Orbigny.*

33. Octopus granosus.

Body small, globular, rather transverse, finely granulated above and below. Arms eight times as long as the body; proportionate length, 4, 3, 2, 1. Web slight.

Octopus granosus *Blainv. Dict. des Sc. Nat.* xliii. 186.; *Faune Française, Moll.* 7. t. 1, 2.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 63.; *D'Orbigny, Moll. Viv. et Fos.* i. 176. n. 9.

Hab. Mediterranean, Sicily. *Blainville.*

34. Octopus pilosus.

Body round, grey, ashy-brown, provided above with reddish hairs disposed in bundles. Arms very short, thick. Cups large. Eyes very large and very prominent.

Octopus pilosus *Risso, Hist. Nat. del Eur. Merid.* iv. 4. n. 5. 1826; *Blainville, Faun. Franç. Moll.* 7. n. 3.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 67.; *D'Orbigny, Moll. Viv. et Fos.* i. 177. n. 10.

Hab. Mediterranean, Nice.—*Risso.*

A very doubtful species. *D'Orb.*

35. Octopus frayedus.

Arms equal, six times as long as the body, without any cups at the end.

Octopus frayedus *Rafinesque, Précis de Découv. Somiol.* 1814; *Blainville, Dict. des Sc. Nat.* 1826, p. 189.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* p. 71.; *D'Orbigny, Moll. Viv. et Fos.* i. 177. n. 11.

Hab. Mediterranean. *Rafinesque.*

36. Octopus didynamus.

Arms unequal, the upper pair longest, nearly five times as long as the body.

Octopus didynamus *Rafinesque, Précis de Découv. Somiol.; Blainville, Dict. d'Hist. Nat.* xliii. 190.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 71.; *D'Orbigny, Moll. Viv. et Fos.* i. 177. n. 12.

Hab. Mediterranean. *Rafinesque.*

37. Octopus tetradynamus.

Arms unequal, alternately longest, about five times as long as the body.—Grey.

Octopus tetradynamus *Rafinesque, Précis des Découv. Somiol.* 1814; *Blainville, Dict. des Sc. Nat.* xliii. 190.; *D'Orbigny et Férussac. Mon. des Céph. Acét.* 71.; *D'Orbigny, Moll. Viv. et Fos.* i. 177. n. 13.

Hab. Mediterranean.

38. Octopus heteropodus.

Arms unequal, very short, scarcely as long as the body; the upper pair longest. Back reddish.

Octopus heteropodus *Rafinesque, Précis de Découv. Somiol.; Blainville, Dict. des Sc. Nat.* xliii. 190.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 71.; *D'Orbigny, Moll. Viv. et Fos.* i. 178. n. 14.

Hab. Mediterranean.

39. Octopus areolatus.

Like *O. Cuvieri;* but the body areolated on the surface, with a dark spot in each areole.

Octopus areolatus *De Haan, MSS. Lettre de* 1835; *D'Orb. et Férussac, Mon. des Céph. Acét.* 65.; *D'Orb. Moll. Viv. et Fos.* i. 186. n. 27.

Hab. Coast of Japan. *De Haan.*

40. Octopus Peronii.

Body rugose. Arms thicker and shorter than those of *O. variolatus*, and with larger and fewer cups. Brownish green.

Sepia Octopoda *Péron, MSS.*
Sepia Peronii *LeSueur, Journ. Acad Nat. Sc. Philad.* ii. 101. 1822.
Octopus Peronii *Féruss. D'Orb. Tab. Class. des Céph.* 54. n. 7. 1823; *D'Orbigny, Moll. Viv. et Fos.* i. 185. n. 25.
Octopus pustulosus *Péron, Blainv. Dict. Sc. Nat.* xliii. 186. 1826; *D'Orb. et Féruss. Mon. des Céph. Acét.* 66.

Hab. New Holland, Isle Dorre.

41. Octopus Fang Siao.

Wangtchao-iu *Encyclopéd. Japonnaise*, lib. 51; *D'Orbigny.*
Octopus Fang-siao *D'Orb. et Féruss. Mon. des Céph. Acét.* 70. *D'Orbigny, Moll. Viv. et Fos.* i. 186. n. 28.

Hab. Coast of Japan.

42. Octopus sinensis.

A large species.

Octopus sinensis *D'Orb. et Féruss. Mon. des Céph. Acét.* 68., *Poulpes*, t. 9. lower figure, *Moll. Viv. et Fos.* i. 186. n. 29.; from *Récueil de Poissons, de Moll. et Crust. grav. et enlum. au Japon, avec les noms Chinois et Japonnais*, folios 36 and 37.; *Encyclopéd. Japonnaise*, liv. 51. fol. 17. verso, *Pen-thsao-kang-mo*, 1593, art. *Tchang-iu.*

Hab. Coast of Japan.

43. Octopus Carena.

Octopus Carena *Verany, Mem. Acad. Torino*, i. t. 2., *Cat. Anim. Invert. Genova*, 17.

Hab. Genoa.

44. Octopus Koellikeri.

Body short, oblong. Arms subulate, slightly webbed at the base; two lower pairs subequal, very short; upper pair rather longer than the second pair.

Octopus Koellikeri *Verany, Cephal. ex Sicil.* ii. t. 1. f. 1. not described.

Hab. Sicily. Perhaps a *Philonexis.*

45. Octopus cocco.

Body conical. Arms moderate, subequal. Superocular beard one, small.

Octopus cocco *Verany, Congresso di Napoli, Col. Anim. Invert. Genova*, 17. 29. t. 4. f. 1. 1846.

Hab. Genoa.

§ 6 *Apocryphal Species.*

46. Octopus colossus.

Poulpe colossal *Montfort, Buff. de Sonnini, Mollusques*, ii. 256. t. 26.

Sepia gigas *Oken, Lehrb. des Zool.* 345. n. 7.; *D'Orbigny et Férussac, Mon. des Céph. Acét.* 70.; *D'Orb. Moll. Viv. et Fos.* i. 187.

Poulpe Kraken *Montfort, Buff. de Sonnini, Moll.* ii. 386.; *D'Orbigny, Moll. Viv. et Fos.* i. 188.

2. CISTOPUS.

Body small, round, without any lateral fins.—*Head* in the direction of the body. Eyes lateral, covered by the skin. External ear indistinct. A small aquiferous system, consisting of a bag with a small pore at the outer edge, situated between the bases of the arms.—*Arms* unequal, elongate, united at the base by a web wider beneath. Cups sessile, two-rowed, flat.—*Siphuncle* conical.—Living on rocky coasts.

Octopus sp. *Gray, B. M.; Rüpp. MSS.; D'Orb. Moll. Viv. et Fos.* i. 183., *Céphal. Acét.* 24.

1. Cistopus Indicus.

Body smooth, pouch-shaped, not bearded. Arms rather elongated, unequal; order of their length, 1, 2, 3, 4; web very broad. Cups large; two or three near the base of the dorsal pair of arms largest.

Octopus indicus *Rüpp. MSS.*; *D'Orb. et Férussac, Mon. des Céph. Acét.* 24., *Poulpes*, t. 25, 26. f. 1—4.; *D'Orbigny, Moll. Viv. et Fos.* i. 183. n. 22.

Hab. Island of Celebes.

a. India. In spirits. Presented by General T. Hardwicke.

3. PINNOCTOPUS.

Body oblong, with broad, lateral, wing-like expansions, which extend in front, and enfold all the body.—*Head* indistinct, narrower than the body. Eyes lateral, dorsal.—*Arms* very long, with two rows of scarcely prominent cups, and with a broad web at the base.

Pinnoctopus *D'Orb. Moll. Viv. et Fos.* i. 193. t. 2.
Octopus sp. *Quoy & Gaim. Voy. Astrol.* 1832.

1. Pinnoctopus cordiformis.

Body orbicular, tubercular, winged. Arms long, nearly equal length, the lateral ones shortest. Eyes rather prominent.—Red-brown, arms with pale-blue lunules.

Octopus cordiformis *Quoy & Gaim. Zool. du Voy. Astrol.* ii. 27. t. 6. f. 2.; *D'Orb. et Féruss. Mon. de Céph. Acét.* 62., *Poulpes*, t. 10. f. 1.

Pinnoctopus cordiformis *D'Orb. Moll. Viv. et Fos.* i. 193. t. 2.

Hab. New Zealand. Only known from M. Quoy's figures.

4. ELEDONE.

Body small, oblong, without fins, rounded behind. Aperture narrow. Ventral part of mantle united to the head by a central fleshy band; nuchal band broad.—*Head* straight, indistinct, narrower than the body. Eyes small, lateral, dorsal, prominent, covered by the continuation of the skin. Beak compressed. Ears slightly marked.—*Arms* long, tapering, webbed at the base. Cups sessile, rather cylindrical, in a single line.—*Siphuncle* elongate, conical, without superior bands or valve.—Emitting a musky smell, and living in rocky places.

Ελεδωνη *Aristot.*; Bolitænæ and Ozolis *of the Ancients.*
Eledone *Aldrovandus, De Moll.* cap. 3. 1606; *Leach, Zool. Misc.* 1817, iii. 137.; *Schweig. Natgsch* 758. 1820; *Rang, Man.* 87. 1829.
Eledon *Cuvier, Règne Anim.* 1817, ed. 2. 1830; *Desh.* in *Lamck. Hist.* xi. 234.; *Pot. et Mich. Zool.* i. 7. 1838; *Verany.*
Eledona *Risso, Eur. Merid.* iv. 2. 1826.
Polypus *Rondelet., Gesner; Owen, Trans. Zool. Soc.* 1838; *Oken, Isis*, 1838, 836.
Sepia sp. *Linnæus.*
Octopus sp. *Lamarck.*
Ozaina *Plin.*
Heledone *Menke, Cat.* ed. 2. 1830.
Moschites *Schneider, Samml. Verm. Abhandl.* 1835. See *Féruss. Bul. Sci. Nat.* 1835-36.
Ozæna *Rafin. Anal. Nat.* 129. 1815; *Montfort.*
" Ozœma *Rafinesque.*"
Eledonæ (fam.) *Risso, Eur. Merid.* iv. 2. 1826.

* *Ocular Beards two. Central Arms equal.*

1. ELEDONE MOSCHATUS.

Body oblong, acuminated behind, smooth, when excited bearded, granular. Ocular cirri elongated, central. Arms long, slender, compressed, equal. Cups far apart.—Colour very variable, with three blackish spots in a horseshoe.—Web edged with blue.

Ελεδωνη *Aristot.* lib. iv. cap. 1.; *Camus*, p. 117.; *Schneider*, ii. 130.
Ozaina *Plin. Hist. Nat.* lib. ix. cap. 30.
Eledona *Belon, De Aquatil.* 333., *La Nat. et Divers. de Pois.* 337.
Polypi tertia species *Rondelet. de Piscib.* lib. xvii. cap. 8. 516. cap. 9. (1st species) 417.
Polypus tertia species *Bossuet, De Aquat.* lib. iv. 740. 871.
Polypus femina *Seba, Mus.* 3. f. 2. 6. 4.

Poulpe musqué *Montfort*, iii. 80. t. 34. 1802; *Cuvier*, *Règne Anim.* iii. 12.
Eledona, Bolitæna, Ozolis, *Aldrovand. De Moll.* cap. 3. 42, 43.
Moschites *Schneider*, *Collect. de div. Dissert.*
Poulpe d'Aldrovande *Montf. Sonn. Moll.* iii. 55. t. 32. 1802.
Octopus moschatus *Lamck. Mém. Soc. Hist. Nat.* i. 22. n. 4. t. 2. 1799; *Hist. An. s. Vert.* vii. 658. n. 4.; *Blainville*, *Dict. Sc. Nat.* xliii. 190.; *Payradeau*, *Cat. Coq. Corse*, 172. n. 349.; *Sangiovani*, *Ann. Sc. Nat.* xvi. 317.; *Blainville*, *Faun. Franç.* 9. n. 7.; *Philippi*, *Enum. Moll. Sic.* 241.; *Rang*, *Mag. de Zool.* 64. t. 91.
Sepia moschata *Bosc*, *Buff. de Deterv. Vers.* i. 48. 1802.
Ozæna moschata *Rafinesque*, *Précis de Découv. Somiol.* 29. n. 72. 1814.
Ozæna Aldrovandi *Rafinesque*, *Précis de Découv. Somiol.* 29. n. 73. 1814.
Eledone moschata *Leach*, *Journ. de Phys.* lxxxvi. 293. 1817; *Cuvier*, *Règne An. Ill.* t.; *D'Orb. et Féruss. Mon. Céph. Acét.* 72. t. 1. 1 bis, 3.; *Potiez et Michaud*, *Gal. de Douai*, i. 7. n. 1.; *D'Orb. Moll. Viv. et Fos.* i. 196. t. 3.
Eledon moschatus *Féruss. D'Orb. Tab. des Céph.* 55. n. 1.; *Delle Chiaje*, *Mem.* iv. 48. 56.
Eledon moschata *Ranzani*, *Mem. di Stor. Nat.* dec. 3. 151. 1819.
Eledona moschata *Risso*, *Hist. Nat. Eur. Merid.* iv. 2. 1826.
Octopus moschites *Carus*, *Nov. Act. Acad. Nat. Cur.* xii. 1st part, 319. t. 32. 1824.
Eledon Aldrovandi *Delle Chiaje*, *Mem.* iv. 43. 67. 1828, "imaginary," *D'Orb.*
Octopus leucoderma *Sangiov. Ann. Sc. Nat.* xvi. 318. 1829.
Eledone Genei *Verany*, *Acad. Reale delle Sc.* i. 1838 (the young), *Congress de Torino*, *Cat. Anim. Invert. Genova*, 17. 29. n. 55. 1846; *Shaw*, *Nat. Miscell.* t. 359.; *Barbut*, *Genera Verm.* 75. t. 8. f. 1.

Hab. Mediterranean.

** *Ocular Beards none. Arms unequal.*

2. Eledone octopodia.

Body rounded, very minutely granular, dilated behind. No ocular cirrhi. Arms of moderate length, conico-subulate, granular, unequal; order of length, 1, 3, 2, 4. Cups close together. —Pale black, brown-spotted.

Sepia octopodia *Pennant*, *Brit. Zool.* iv. 53. t. 28. f. 44.
Sepia moschites *Herbst. Einleit. zur*, *&c.* 80. n. 5. t. 389.
Sepia cirrhosa *Bosc*, *Buff. de Deterv. Vers.* i. 47.

Poulpe cirrheux *Montfort, Buff. de Sonnin. Moll.* iii. 67. t. 33.
Octopus cirrhosus *Lamck. Mém. Soc. Hist. Nat. Paris*, i. 21. n. 3. t. 1. f. 2. a, b.; *Férussac, D'Orb. Tab. Méthod. Céph.* 56. n. 2.; *Blainville, Dict. Sc. Nat.* xlvii. 191.
Octopus ventricosus *Grant, Edin. New Phil. Journ.* 1827, p. 309.; *Bullet.* (*Féruss.* xii. 397. 1827.)
Eledone cirrhosus *D'Orb. et Féruss. Mon. Céph. Acét. Eledons*, t. 2.; *D'Orb. Moll. Viv. et Fos.* i. 194.

Hab. Coast of Britain and Europe.

23. *a.* Berwick on Tweed. In spirits. Presented by G. Johnston, M.D.
b. Dalmatia. In spirits. Purchased of Dr. Heckel.

5. CIRROTEUTHIS.

Body round. Fins oblong, transverse, dorsal. Aperture very small, inferior.—*Head* small; cervical band occupying three fourths of the circumference. Eyes small, lateral ventral, without eyelids.—*Arms* equal, conical, subulate, united together by a thin funnel-shaped web, which is immediately attached to the arms at the base (as high as the fifth cup) and at the tip, but in the middle is united to the back of the arm by a thin skin, forming a kind of pouch. Cups in a single row, alternating with fleshy beards.—*Siphuncle* moderately long.

Cirroteuthis *Eschrich. Nov. Act. Nat. Cur.* xviii. 625. (1836, 1838); *Desh. Lamck. Hist.* ed. 2. xi. 234. 1845.
Cirrhoteuthis *Moller, Ind. Moll. Groen.* 4.; *Koryer, Naturk. Tidsk.* iii. 98. iv. 77.; *D'Orb. Moll. Viv. et Fos.* i. 198. 1845; *Gray, Proc. Zool. Soc.* 1847, 205. n. 795. (not Chiroteuthis *D'Orb.*)
Sciadephorus *Reinh. & Prosch, Kong. Dansk. v. Selsk. Naturv.* xii. 1846.
Sciadophorus. 1847, misprint, see *Herrmann*, 442.
Bostrychoteuthis *Agassiz, Nomenclat*, 87.

1. Cirroteuthis Mulleri.

Body smooth, oblong, three-lobed. Fins longer than broad, blunt, depressed. Eyes very small. Arms equal, quadrangular. Cups very small, oval, about thirty; beards between the cups filiform.—Violet.

Cirroteuthis Mulleri *Eschrich. Nov. Act. Phys. Med. Acad. Cæs. Leop. Nat. Cur.* xviii. part 2. 625. t. 46, 47, 48.; *Desh. Lamck. Hist.* xi. 234.
Cirrhoteuthis Mulleri *D'Orbigny, Moll. Viv. et Fos.* i. 198. t. 4.; *Moller, Ind. Moll. Groenl.* 4.

Sciadephorus Mulleri *Reinh. & Prosch Kong. Dansk. v. Selsk. Naturv.* xii. t. 1, 2. 1846.

Hab. Coast of Greenland.

Fam. II. PHILONEXIDÆ.

Body oblong. The ventral portion of the mantle free, supported by a button on to the lower part of the siphuncle, fitting into a transverse cavity in the inner surface of the mantle. Ventral opening very large, extending on the sides of the neck. Cervical band narrow.

Head moderate. Eyes large, prominent, without any beards. External ear without any crest, on the side of the neck, behind the eyes, and above the cervical band. Aquatic pores, two, four, or six; two on the head above, two anal below, or two on each side, and sometimes some small ones at the base of the head, which is enclosed in the mantle; the larger cephalic and anal pore communicating with a large cavity placed under the head, and passing above the eyes; sometimes this cavity is separated into two by a medial line.

Arms elongate, tapering, not crested, simple at the end. Cups fleshy, pedunculated, very extensible, subcylindrical, in two rows, sometimes far apart.

Siphuncle broad, short, without any upper band or internal valve.

Shell none, neither internal nor external.

Pelagian, living on the high seas. Crepuscular or nocturnal, eating floating mollusca.

Philonexidæ (pars) *D'Orb. Moll. Viv. et Fos.* i. 199. 1845.
Philonexiana *Gray, Proc. Zool. Soc.* 1847.

Synopsis of Genera.

1. Philonexis. Arms free.
2. Tremoctopus. Arms, upper pair webbed.

1. PHILONEXIS.

Arms free, tapering, unequal.—Nocturnal. Above the eyes blue.

Philonexis *D'Orb. Céph. Acét.* 1839, *Moll. Cuba*, i. 7. 21. 1841, *Voy. Amér. Mérid.* 1835, *Ann. Sci. Nat.* xvi. 1841.
Philonexis (pars) *D'Orb. Moll. Viv. et Fos.* i. 200. 1845; *Gray, Proc. Zool. Soc.* 1847, 205. n. 797.
Philonexus *D'Orb. Gray, Syn. B.M.* 87. 98. 1842.
Octopus sp. *Blainv. Férussac.*

* *Two upper Pairs of Arms longest, free; lower very small.*

1. PHILONEXIS ATLANTICUS.

Body smooth, roundish, large. Head of moderate size, smooth. Eyes prominent, large, without eyelids. Water-bearing apertures two above. Arms slender, unequal; in order, 1, 2, 4, 3; not webbed, except at the base. Cups peduncled.—White, spotted with red.

Octopus (Philonexis) atlanticus *D'Orb. Voy. Amér. Mérid. Moll.* 19. t. 11. f. 1—4. 1835.

Philonexis atlanticus *D'Orb. Mon. Céph. Acét.* 98., *Poulpes*, t. 16. f. 4, 5. 1838, *Moll. Viv. et Fos.* i. 203. 1845.

P. Quoyianus, jun. ? *D'Orb.* l. c. 203.

Hab. Atlantic Ocean, under the tropics.

** *The upper Pair of Arms very long, free; rest short.*

2. PHILONEXIS EGLAIS.

Body ovate, large; skin thick, dilated, and covered all over with small rounded peduncled horny buttons which are divided into five or six equal regular lobes round a common centre. Head very small. Eyes prominent. Arms very unequal, and two upper arms very long; order of length, 1, 2, 3, 4; inferior very short.—White; back red spotted, above the eyes blue.

Octopus (Philonexis) Eglais *D'Orb. Voy. Amér. Mérid. Moll.* 20. t. 1. f. 18. 14. 1835.

Philonexis Eglais *D'Orb. Mon. Céph. Acét.* 102., *Poulpes*, t. 17. f. 4, 5. 1838, *Moll. Viv. et Fos.* i. 204. 1845.

Hab. North Atlantic Ocean.

3. PHILONEXIS MICROSTOMUS.

Body rounded, large, smooth, reddish. Head broad. Eyes very large, prominent. Arms smooth, short, very unequal, not webbed; order of length, 1, 2, 4, 3; upper three times as long as lower.

Octopus microstomus *Regnaud, Mag. de Zool.* 23. 1834.

Philonexis microstomus *D'Orb. Mon. Céph. Acét.* 101., *Poulpes*, t. 10. f. 5. 1838, *Moll. Viv. et Fos.* i. 204. 1845.

P. atlanticus, jun.? *D'Orb.* l. c. 205.

Hab. North Atlantic Ocean.

*** *The upper Arms longest; rest gradually shorter, to the lowest.*

4. PHILONEXIS HYALINUS.

Body short, broad, smooth, oval, larger before than behind; aperture very large; diaphanous, whitish, marked with red. Head short. Eyes large, prominent, subpedunculated. Arms unequal, not webbed, as long as the body; order of length, 1, 2, 3, 4; upper much longer than the lower.

Octopus hyalinus *Rang, Féruss. et D'Orb. Mon. Céph. Cryptod. Poulpes*, t. 16. f. 1. 1835; *Rang, Mag. de Zool.* 1837, cl. v. 66. t. 92. 1837.

Philonexis hyalinus *D'Orb. Mon. Céph. Acét.* 104., *Poulpes*, t. 16. f. 113. 1838, *Moll. Viv. et Fos.* i. 205. 1845.

Hab. Atlantic Ocean.

**** *The Arms very long, free, very slender. Cups far apart.*

5. PHILONEXIS TUBERCULATUS.

Body oval, pointed behind, very large, smooth above; beneath covered with small, short, horny tubercles, united by netted ridges; aperture very large. Head short, not very distinct; water-bearing apertures four, two above and two below. Arms slender, elongate, nearly equal; comparative length, 1, 4, 2, 3; scarcely webbed. Cups distant, united in each line by an intermediate membrane. Siphuncle very large, larger than the head.—Brown, silvery beneath; arm bluish.

Octopus tuberculatus *Risso, Hist. Nat. Eur. Merid.* iv. 3. n. 4. 1826; *Delle Chiaje, Mem.* iv. 55, 56. t. 55. n. 3. 1832 *Mém. sur l'Aplysia*, p. 68. note.

Octopus reticularis *Petagna, Rappelle delle Sc. di Napoli*, 1826 (1828).

Octopus catenulatus *Férussac, Poulpes*, t. 6. 6*. 6**. 1828.

Octopus Verany *Wagner, Zeitschr. für die Org. Phys.* ii. 1828, *Bullet. Univ. des Sc. Nat.* xix. 388. n. 3.

Polpo di Férussac *Delle Chiaje, Mem.* iv. 41. 1829.

Octopus pictus *Blainv. Faun. Franç. Moll.* 8. n. 6. from Risso.

Philonexis tuberculatus *D'Orb. Mon. des Céph. Acét.* 87., *Poulpes*, t. 6. 6*. t. 23. 1838, *Moll. Viv. et Fos.* i. 206. t. 5. f. 2—6. 1845.

Hab. Mediterranean.

6. PHILONEXIS ALCÆUS.

Body smooth above and below; brown spotted. Arms elongate, slender, free; the upper and lower pairs very long; the two lateral pairs much shorter. Cups far apart.

Perhaps young of former, no appearance of tubercles beneath, both surfaces alike.

a, *b*. South of Europe. In spirits. Presented by P. B. Webb, Esq.

2. TREMOCTOPUS.

Arms moderate, triangular, upper surface flat, with two series of subcylindrical sessile cups; two upper pair longest, and webbed nearly to the tip. Aquiferous openings four; two above between the eyes, and two below, and sometimes six smaller on each side.

Tremoctopus *Delle Chiaje*, *MS.* 1835, quoted by D'Orbigny; *Verany*, *Cat. Anim. Invert.* 1848.
Tremectopus *Gray*, *Proc. Zool. Soc.* 1847, 205. n. 793. misprint.
Philonexis sp. *D'Orb. Céphal. Acét.* 1838, *Moll. Viv. et Fos.* i. 205.
Ocythoe sp. *Risso*, *Eur. Merid.* iv.
Octopus sp. *Férussac*, *Rang.*
Phisoniscus *Rüppell*, *MS. Brit. Mus.*

* *Webs moderate. Lower Arms shorter, free. Head large.*

1. Tremoctopus Quoyanus.

Body smooth, oblong, large, pointed behind; white, marked with red. Head large, smooth. Eyes large, prominent, without eyelids, blue above. Water apertures four; two above between the eyes, and two below. Arms elongated, unequal; order of length, 1, 2, 4, 3; two dorsal pair longest, and webbed together half their length.

Octopus (Philonexis) Quoyanus *D'Orb. Voy. dans l'Amér. Mérid. Moll.* 17. t. 2. f. 6—8. 1835, *Mag. de Zool.* 1835, 141.
Philonexis Quoyanus *D'Orb. Mon. Céph. Acét.* 96., *Poulpes*, t. 16. f. 68. 23. 1838, *Moll. Viv. et Fos.* i. 202. t. 5. f. 1. 1845.
Octopus semipalmatus *Owen*, *Trans. Zool. Soc.* ii. t. 21. f. 12, 13. 1836.

Hab. Middle of South Atlantic Ocean.

** *Arms all webbed. Head moderate, with several small ocular aquiferous Apertures.*

2. Tremoctopus violaceus.

Body rather ovoid, truncated anteriorly, nearly smooth, violet. Head short. Aquiferous apertures four, large; two above and two below; and six small ones near each eye. Arms elongated; order

of length, 2, 1, 3, 4; two dorsal pairs flattened, and webbed to the tip.

Octopus velifer *Féruss. Poulpes*, t. 18, 19. 1830; *Verany, Cat.* 1829.
Tremoctopus violaceus *Delle Chiaje, MS.* 1835; *Verany, Cat.* 1829.
Octopus violaceus *Féruss. Poulpes*, t. 20. from Chiaje.
Octopus velatus *Rang, Mag. de Zool.* p. 60. 1837.
Philonexis velifer *D'Orb. Mon. Céph. Acét.* 91., *Poulpes*, 18, 19, 20. 23. 29. 1838, *Moll. Viv. et Fos.* i. 205. t. 5. f. 7. 1845.
Phisoniscus velatus *Rüppell, MS. Brit. Mus.*
Ocythoe mygaro *Risso, Eur. Merid.*

Hab. Mediterranean.

a. Messina. Adult. In spirits. Dr. Rüppell's Collection.

Fam. III. OCYTHOIDÆ (ARGONAUTIDÆ?).

Body ovoid, enlarged in front, smooth, covered with a thin skin marked with chromatic glands. Ventral aperture extending to under the eyes. Cervical band moderate. Ventral part of the mantle supported by an elevated button on the inner side near the margin, fitting into a notch at the base of the siphuncle.

Head oblique, short above and long below. Eyes lateral, very large, ovate, prominent, covered on the upper edge with a very thin eyelid. Beak broad, not compressed. Ear small, behind the eye, under the cervical band and lateral aquiferous opening. Aquiferous openings one pair at the upper hinder angle of the eye.

Arms tapering, very unequal; the dorsal pair bent back on themselves and furnished with a membrane, the lower pair with a broad membranous exterior keel, the lateral pairs depressed. Cups in two series, prominent, as if slightly pediceled.

Siphuncle very large, conical, attached by two exterior lateral and two other medial very thin bands.

? *Shell* (Argonauta) exterior, one-celled, thin, brittle, transparent, horny, calcareous, slightly flexible when wet; nucleus hemispherical, very large.

The female *Ocythoes* are often found in the shell of the *Argonaut*, and have hence been supposed to form these shells, and as yet no other animal has been found inhabiting them; but there are several reasons for believing that the *Ocythoe* is only a parasite adapted by its form to live in such shells, as the web of the arms is used by the animal to embrace the shell and keep it in its right

position on the body. Unlike all other Mollusca, which form the shell they inhabit: First, the *Ocythoe* is not attached to the shell by any muscle, nor has it any muscle, like the bone-bearing cuttle-fish, formed for the purpose of attaching the body to an internal shell. Secondly, the animal, when alive, does not fit the shell; so that the shell cannot have been moulded on its body, as in other Mollusca. Thirdly, the skin of the *Ocythoe* is of the same texture and appearance as in the other naked *Cephalopoda;* and the presence of sand between the shell and the body appears to cause no uneasiness to the animal, as it does in all other shell-bearing Mollusca, where the animal immediately rids itself of the irritation so caused by covering the sand, &c., with a calcareous coat. The animals found in these shells are always female, and the apex of the shell is filled with very small eggs; while from the large size of the young shell, which is seen on the apex of the true Argonaut, we should expect the animal which formed that shell to have a large egg; for, though the eggs of Mollusca are enlarged during the hatching, they are not, in any case I have observed, so much enlarged as to have such a shell.

It is supposed by those who believe that the shell belongs to the *Ocythoe*, that it is formed and mended when broken by the expanded ends of the upper arms, which embrace the outer surface of the shell, and keep it on the body of the animal.

Cranch and Adams, who have seen these animals alive, state that they leave the shell when they are frightened, and they cannot recover their position in the shell after they have thus left it.

Mr. Adams regards the Argonaut shell as a nest formed by the female to contain her eggs; if this is correct, it can scarcely be compared to other shells. He regards them as similar to the cartilaginous cases which Murices and other zoophagous Mollusca form to contain their eggs!; but they have no apparent analogy to those bodies, which are secreted by the oviduct as the eggs are deposited.

These various views show that the origin of the shell is not yet distinctly settled.

Living on the high seas, floating, and feeding on floating Mollusca.

Cephalopoda testacea (pars) *Cuvier, Anat. Comp.* 1800.
Cephalopoda testa unilocularia *Lamck. Phil. Zool.* i. 322. 1809.
Ceph. Argonautidæ *Cantraine, Mall. Médit.* 13. 1841.
Ceph. Argonautica *Gravenhorst, Thier.* 1845.
Philonexidæ (pars) *D'Orb. Moll. Viv. et Fos.* i. 199. 1845.
C. cymbicochlides (pars) *Latr. Fam. Nat.* 168. 1828.
C. octopia and C. argonautea *Rafin. Anal. Nat.* 1815.
Cephalopodes monothalmes *Lamck. Hist.* ed. 2. 171. 343.
Ocythoina *Gray, Proc. Zool. Soc.* 1847. 204.

1. OCYTHOE.

See character of the Family.

Ocythoe *Rafin. Anal. Nat.* 1815; *Leach, Phil. Trans.* 1818; *Blainv. Malac.* 1825.
Octopus ϵ. *Blainville, Malac.* 1825.
Ocytoe *D'Orb. Moll. Viv. et Fos.* p. 223. (misprint?).
Shell, ARGONAUTA *Linn.*
Nautilus, Nautileus, *Aristoteles.*
Nautilus, Pompilius, *Plinius.*
Cymbium *Gualteri*, 1742.
Argonauta *Linn., Brug., Rafin. Anal. Nat.* 1815; *Risso, Eur. Merid.* 1826; *Lamarck, D'Orb. Moll. Viv. et Fos.* i. 260.

1. OCYTHOE TUBERCULATUS.

Animal elongate. Body oblong, smooth. Eyes large, prominent. Arms unequal; in the following order, 1, 4, 2, 3; the dorsal pair elongate; the second and third pairs without any internal groove; the third pair depressed their whole length. Siphuncle united to the base of the arms by a lateral membrane.

Ocythoe tuberculata *Rafinesque, Précis de Découv. Somiol.* 29.
Ocythoe Argos *Deshayes, Enc. Méth.* iii. 643.
Ocythoe antiquorum *Leach, Zool. Miscel.* iii. 139., *Journ. de Phys.* lxxxvi. 394.; *Blainv. Journ. de Phys.* lxxxvi. 360. 434—447.
Ocythoe probatio *Leach, Phil. Trans.*
Octopus antiquorum *Blainv. Dict. Sc. Nat.* xliii. 192. t. 1 bis, f. 1.
Octopus Argonauta *Blainv. Malacol.* 366. t. 1 bis, f. 1.
Octopus tuberculatus *Blainv. Dict. Sc. Nat.* xliii. 196.
? Argonauta compressa *Blainv. Dict. Sc. Nat.* 212.
Argonauta Argo *D'Orb. Paléont. univ.* t. 1, 2. f. 1—5., *Paléont. étrang.* t. 1. t. 2. f. 1—5., *Moll. Viv. et Foss.* i. 226. t. 6 and 7. f. 1—5.

Hab. Mediterranean, Cape of Good Hope, Indian Ocean.

a. Mediterranean. Adult, without shell. In spirits. Presented by Rev. W. Hennah.
b. Mediterranean. Junior, without shell. In spirits. Presented by Rev. W. Hennah.
c. Mediterranean. Adult, without shell. In spirits. Presented by J. Bates, Esq., R.N.
d. Mediterranean. Adult, without shell, with eggs. In spirits. Presented by W. E. Leach, M.D.
"Ocythoe probatio" *Leach.*

e, f. Mediterranean. In Argonaut shell, expanded and contracted.

g. Indian Ocean. In Argonaut shell, contracted. Presented by Capt. Sir Edward Belcher, C. B., R. N.

Shell (ARGONAUTA ARGO) compressed, transversely ribbed on the sides, adorned with unequal bifurcated ribs. Keels two, approximate, tuberculiferous; tubercles small, very frequent. Aperture compressed, sagittate, truncated in front.

Argonauta Argo *Linn. Syst. Nat.* 10. edit. 708. n. 231., *Mus. Lud. Ul.* 548. n. 148., *Syst. Nat.* 12. ed. 1161. n. 271.; *Born, Ind. Mus. Cæs.* 119. A. 1., *Test.* 140, *Vign.* 139.; *Gmel. Syst. Nat.* 3367.; *Brug. Enc. Méth. Vers.* i. 122.; *Walfen, Nov. Act. Phys. Nat. Cur.* viii. 235.; *Olivi, Zool. Adriat.* 129.; *Schreibers, Conchylien*, i. 1. n. 1.; *Turton, Syst. of Nat.* iv. 304.; *Duvernoy, Dict. Sc. Nat.* iii. 102.; *Fischer, Mus. Demidow*, iii. 245.; *Wood, Zoography*, ii. 579.; *Montfort, Conchyl.* ii. t. 6, 7.; *Oken, Lehrb. der Zool.* ii. 336.; *Brooke's Introd. to Conchol.* 90. t. 5. f. 53.; *Burrow, Elements of Conchol.* 75. t. 12. f. 1.; *Brown, Elements of Conch.* 65. t. 7. f. 18.; *Dillwyn, Descr. Cat.* i. 333.; *Schumacher, Ess. d'un Nouv. Syst.* 268.; *Ranzani, Consid. su i Moll. Cefalop. del Argon* in *Opusc. Scient. et Mem. di Stor. Nat.* dec. 1. p. 85. t. 6. f. 1.; *Lamarck, Anim. s. Vert.* 2d edit. viii. 652. n. 1.; *Sowerby, Genera of Shells; Férussac, Dict. Class.* i. 552. n. 2.; *Mawe, Linn. Syst. Conchol.* 79. t. 18. f. 1.; *De Martins, Reize nach Venedig*, ii. 438.; *Wood, Ind. Test.* 62. t. 5. f. 1. 2d edit. t. 13. f. 1.; *D'Orb. Prodr.* 47. n. 1.; *Féruss. Not. sur l'Anim. du Genre Argonaute*, in *Mém. Soc. d'Hist. Nat. Paris*, ii. 160. t. 14.; *Poli, Mem. sul Nautil. o Argon. Arg. l'Antologia*, 58., *Test. utriusq. Sicil.* iii. 1. t. 40. to 43., *Ann. of Philos*, 1825, 152.; *Payradeau, Cat. Moll. Corse*, 172. n. 348.; *Risso, Hist. Nat. Eur. Merid.* iv. 4.; *Blainville, Dict. Sc. Nat.* xliii. 212., *Malacolog.* 494.; *Rapp, Ueber die Naturwiss. Abhand.* i. 67. t. 2. f. 1, 2.; *Mauriani, Giorn. de Fisica*, ix. 390.; *Broderip, Zool. Journ.* iv. 57. and 224. t. 3.; *Costa, Cat. de Test.* n. 1. 61.; *Delle Chiaje, Mem. sul. Stor. Nat.* ii. 219.; *Blanchart, Bullet. Soc. Linn. Bord.* iii. liv. iv. 195.; *Eichwald, Zool. Spec.* ii. 34.; *Guérin, Iconog. Règ. An. Moll.* t. 1. f. 3. a. 6.; *Philippi, Enum. Moll. Sic.* 240.; *Potier et Michaud, Gal. de Douai*, 2. n. 1.; *D'Orbigny, Moll. des Antilles*, i. 24. n. 5.; *Reeve, Conch. Syst.* ii. 305. t. 300.

Nautilus papyraceus *Martini, Conchyl. Cab.* i. 230. t. 17. f. 157.; *Shaw, Nat. Miscell.* iii. t. 101.; *Cubières, Hist. abrég. des Coq.* 43. t. 4. f. 6.

Argonaute papyracé *Bosc, Buff. de Deterv. Coq.* iii. 261. t. 27. f. 6.; *Montfort, Buff. de Sonnini, Moll.* 119. t. 35.

Argonauta corrugata *Humphrey*, *Mus. Calon.* 6. n. 80. 1797.
Argonauta sulcata *Lamarck*, *Syst. An. s. Vert.* 99. 1801.
Argonauta grandiformis *Perry*, *Conchyl.* t. 42. f. 4.
Arg. striata *Perry*, *Conchyl.* t. 42. f. 4.

Hab. Atlantic Ocean, Cape of Good Hope, Amboyna, Mediterranean.

a—*j*. Shells, different ages. From Mr. Broderip's Collection.
k. Shell. From Mr. Mantell's Collection.
l. Shell. ————.
m. Shell. Mus. Cracherode.
n, *o*. Shell. Malta. Presented by Miss E. Attersoll.

2. OCYTHOE RARICYATHUS.

Animal elongate. Body acuminated behind, smooth. Arms more webbed below than above, unequal; in the following order, 1, 2, 4, 3; the second and third pairs keeled on the outer side; the third pair depressed.

Octopus raricyathus *Blainville*, *Mém. Journ. Phys.* lxxxvi 393. 1824, *Dict. Sc. Nat.* xliii. 104.
Argonauta nodosa *D'Orb. Moll. Viv. et Fos.* i. 231.

Hab. Cape of Good Hope, India.

Shell (ARGONAUTA NODOSA) compressed, thin. Sides with transverse rugæ, which are longitudinally tuberculiferous; tubercles of keels rather eminent, compressed. Aperture compressed externally, having two divaricate ears.

Argonauta Argo *Linnæus*, *Syst. Nat.* edit. 9, 10, 11, 12. 1161. n. 271. part; *Gmelin*, *Lin. Syst. Nat.* var. *b. e.*; *Bruguière*, *Encyc. Méth. Vers*, i. 123. var. B.; *Turton*, *Syst. Nat.* iv. var. 4.
Argonauta nodosa *Solander*, *MS.*, and *Portland Cat.* 76. 2120. 17.; *Humphrey*, *Mus. Calon.* 6. n. 81. 1797; *D'Orbigny*, *Moll. Viv. et Fos.* i. 231.
Nautile papyracé *Favart d'Herbigny*, *Dict.* ii. 425, 426.
Paper Nautilus *Kämmerer*, *Cabin. Rudolst.* 29. var. 6.
Le Nautile à grains de riz *Favanne*, *Conchyl.* i. 714. t. 7. f. A. 7. A. 9. p. 715.
Argonauta oryzata *Museum Geversianum*, 252. n. 133.
Argonaute à grains de riz *Montfort*, *Buff. de Sonnini*, *Moll.* iii. 307. t. 37, 38, 39. f. 1. p. 332. t. 40. p. 364.
Argonaute chiffonné, Argonaute à oreilles, *Sonnini*, *Moll.* iii. 307. t. 39. f. 2.; *Martini*, *Conch. Cab.* i. 221. f. 1. 229. t. 17. f. 156. t. 18. f. 166.
Argonauta navicula *Soland. MS.*, and *Port. Cat.* 42. 1055.
Argonauta vitrea *Perry*, *Conch.* t. 42. f. 1.

Argonauta tuberculata *Shaw, Nat. Misc.* xxiii. t. 995.; *Dillwyn, Descript. Cat.* 334.; *Blainville, Journ. de Phys.* lxxxvi. 445. f. 1. *a, b, c.*; *Wood, Ind. Test.* 62. n. 2. t. 13. f. 2.; *Bowdich, Elements of Conch.* t. 13. f. 4.; *Férussac, Dict. Class.* i. 552. n. 3.; *D'Orbigny, Prodr.* 48. n. 3.; *Eichwald, Zool. Spec.* ii. 34.; *Deshayes, Enc. Méth.* ii. 69.

Argonauta tuberculosa *Schumacher, Ess. d'un Nouv. Syst.* 260.; *Lamarck, An. s. Vert.* 2d edit. vii. 632. p. 2.; *Blainv. Dict. Sc. Nat.* xliii. 212. f. 1. *a, b.*, *Malacolog.* 365. t. 1. f. 1. *a, b.*

Hab. Indian seas.

a, b. Shells. Mr. Broderip's Collection.
c. Shell. New Zealand. Presented by And. Sinclair, M.D., R.N.
d, e. Shells. New Zealand. Presented by Dr. Dieffenbach.
f—h. Shells.
i. Shell. Mus. Cracherode.
k; l. Shells. Mr. Broderip's Collection.
m. Shell. Chiloe. Mr. Broderip's Collection.
n—r. Shells, young.
s. Shell. In spirits. One ear. Mr. Broderip's Collection.

3. Ocythoe Cranchii.

Animal small. Head long. Ventral aperture large. Aquiferous openings two. Arms short, unequal; in the following order, 1, 2, 3, 4; the webbed arms small, thick.

Ocythoe Cranchii *Leach, Journ. Phys.* 1817; *Tuckey, Voy. Congo*, 410. t., *Phil. Trans.* 1817, 296. t. 12.; *Blainv. Journ. Phys.* lxxxvii. 47. t. 86. f. 2. *a, b.*, *Dict. Sci. Nat.* xlii. 195.

Octopus punctatus *Blainv. Dict. Sci. Nat.* xliii. 195.

Argonauta hians *D'Orb. Moll. Viv. et Foss.* i. 232.

Hab. Atlantic Ocean.

a. Coast of Africa. Without shell. In spirits. Presented by J. Cranch, Esq., Congo Expedition.
b. ———— ? With young shell. In spirits.

Shell (Argonauta hyans) compressed, whitish brown, adorned with unequal radiating ribs. Keels remote, margined on each side with thick tubercles. Aperture broad, oblong.

Argonauta Argo *Linn. Syst. Nat.* edit. 9, 10, 11, 12. 1161. n. 271. part; *Born, Test. Mus. Cæs.* 140. var. β.; *Gmel. Syst. Nat.* 3369. var. δ.; *Bruguière, Encycl. Méth. Vers.* i. 123. var. c.; *Turton, Syst. of Nat.* iv. var. 3.

Nautilus papyraceus *Davila, Catal. Syst.* i. 108. n. 87. 2d spec.; *Seba, Thesaur.* iii. t. 84. f. 9—12.; *Menschen, Cat. Mus. Oudan.*

8. n. 49.; *Cat. Mus. Leersian.* 10. n. 66, 67.; *Favart d'Herbigny, Dict.* ii. 426.; *Favanne, Cat. de la Tour d'Auvergne*, 57. n. 248., *Conchyl.* i. 711. t. 7. f. A 6. f. A 3. 713., f. A 10. f. A 1. p. 717.

Argonaute papier brouillard *Montfort, Buff. de Sonnin. Moll.* iii. 358 and 371.

Nautilus tenuis *Martini, Conch. Cab.* i. 235. t. 17. f. 159. 658. et p. 238., vignette, p. 221. f. 2.

Argonauta hyans *Solander, MS.*, and *Portland Cat.* 44. 1055.; *Humphrey, Mus. Calonn.* 6. n. 82.; *Dillwyn, Desc. Cat.* 334. n. 3.; *Férussac, Dict. Class.* i. 553. n. 4.; *D'Orb. Prodr.* 48. n. 5.; *D'Orb. et Féruss. Mon. Céph. Acét. Argonautes*, t. 5.; *D'Orbigny, Paléont. univ.* t. 2. f. 6—10., *Paléont. étrang.* t. 2. f. 6—10., *Moll. Viv. et Fos.* i. 223. t. 7. f. 6—10.; *Adams, Voy. Samarang, Moll.* 4. t. 3. f. 2. *a*, *b*, *c*.

Ocythoe Cranchii *Leach, Phil. Trans.* 1817, 296. t. 12. f. 1—6.

Argonauta Cranchii *Férussac, Dict. Class.* i. 552. n. 1.; *D'Orb. Class. des Céph.* 48. n. 6.

Argonauta haustrum *Dillw. Descr. Cat.* 335.; *Wood, Ind. Test* 62. n. 5.; *Deshayes, Enc. Méth.* ii. 70. n. 3.; *D'Orb. Moll. de l'Am. Mérid.* 12., *Moll. des Canar.* 17. n. 3., *Moll. des Antill.* i. 28. n. 6.

Argonauta gondola *Dillwyn, Desc. Cat.* 335. n. 4.; *Wood, Ind. Test.* 62. n. 4.; *Férussac, Dict. Class.* i. 553. n. 5.; *Mawe, Lin. Syst. Conchol.* 79. t. 18. f. 2.; *Deshayes, Encyc. Méth.* ii. 69. n. 2.; *Adams, Zool. Voy. Sam. Moll.* 3. t. 1. f. 2. *a.*, t. 2. f. 2. *q*, *r*, *s*, *t*.

Argonauta nitida *Lamarck, An. s. Vert.* vii 653. n. 3.; *Blainv. Dict. des Sc. Nat.* xliii. 213.; *Crouch, Conchyl.* 43. t. 20. f. 17.; *Deshayes, Encyc. Méth.* ii. 69.

Argonauta crassicostata *Blainv. Dict. Sci. Nat.* xliii. 213.

Argonauta raricosta *Blainv. Dict. Sc. Nat.* xliii. 213.; *Deshayes, Enc.* ii. 69 n. 1.

Argonauta Owenii *Adams, Zool. Voy. Samarang*, 4. t. 3. f. 1. *a*, *b*, *c*.

Hab. Coast of Africa, China.

a—*c*. Shells. Mr. Broderip's Collection.
d. Shell. Without ears. Mr. Broderip's Collection.
e. Shell. China. Presented by John Reeves, Esq.
f—*j*. Shells, young.

Species not sufficiently described.

4. "ARGONAUTA RUFA."

Animal and shell thick, red.

Argonauta rufa *Owen, Trans. Zool. Soc.* ii. 114.

Hab. South Pacific. Capt. P. P. King, R.N.

Order II. SEPHINIA.

Body elongate, oblong, or cylindrical, sometimes without any cervical band. Fins developed, lateral or dorsal, posterior. Mantle supported by a fleshy band, or by cartilaginous buttons and loops.

Head smaller than the body. Eyes free in the orbit, turning in every direction in the very large orbital cavity. Buccal membrane largely developed. Aquiferous apertures on the lips and arms, but none on the head.

Arms ten; eight sessile, often edged with membranes; two tentacular, elongated, coming out between the third and fourth pairs of sessile arms and the lips. Cups oblique, peduncled, strengthened with a horny ring, sometimes formed into a claw.

Siphuncle almost always provided with an internal valve.

Shell internal, longitudinal, occupying and strengthening the middle of the back.

Sepia *Linn. S. N.*

Ceph. antepedia Sephinia *Rafin. Anal. Nat.* 139. 1815.

Cephalopoda decapoda *Leach, Zool. Misc.* iii. 1817; *Férussac, Tabl. Syst.* 18. 1821; *Gray, Proc. Zool. Soc.* 1847, 205.; *Menke, Syn.* i. 1828; *Cantraine, Mal. Médit.* 13. 1841.

Antliobrachiophora Sepiaphora *Gray, Lond. Med. Rep* 1821.

Cryptodibranchiata decacera *Blainv. D. S. N.* xxii. 1824; *Menke, Syn.* ed. 2. 1830.

Cephalopoda decapoda enterostea *Latr. Fam. Nat.* 160. 1825.

Loliginea *Gravenh. Thier.* 34. 1834.

Decabrachides *Blainv.*

Sepiaceæ *Blainv. Dict. Sci. Nat.* xii. 90. 1818; *Ehrenb. Sym. Phys.* 1831.

Sepiadæ *Fleming, Brit. Anim.* 252. 1828.

Sepiæ (les Seiches) *Féruss. Tab. Syst.* 24. 1821.

Sepiæphora *Gray, Lond. Med. Rep.* 1821; *Desh. Ency. Méth.* iii. 946.

Sepiophora *Gray, Mem. B. M.* 92. 1843; *Herrmannsen, Ind.* ii. 442.

Sepialea (pars) (les Sepiales) *Lamck. Phil. Zool.* 1809.

Sepiolea *Lamck. Extrait du Cour.* 1812; *Desh. Ency. Méth.* p. 236. 1830.

Sepiaria (pars) (les Sepiares) *Lamck. Hist.* vii. 654. 1822.

Sepiina *Macgillivray, Moll. Aberd.* 22. 1843.

Sepiidæ *Cantrain. Malac. Méd.* 13. 1841; *Leach, Zool. Misc.* iii. 138. 1817.

M. D'Orbigny separates this order into two suborders (*Moll. Cuba*, i. 7. 1841) thus:

i. *Myopsidæ* Eyes covered with the skin, without immediate contact with the water: this will contain *Cranchiadæ*, *Sepiadæ*, *Spirulidæ*, and *Loligidæ*.

ii. *Oigopsidæ*. Eyes open externally, in immediate contact with the water: *Loligopsidæ*, *Chiroteuthidæ*, *Onychoteuthidæ*, and *Belemnitidæ*.

Synopsis of Families.

A. *Shell solid, horny.*—CHONDROPHORA.

a. Mantle supported by two internal fleshy Bands. (Allied to Octopidæ.)

I. *CRANCHIADÆ.* Eyes covered with the skin. Siphuncle with a valve.

II. *LOLIGOPSIDÆ.* Eyes naked. Siphuncle simple.

b. Mantle furnished with three internal Cartilages; one dorsal, two ventral.

III. *CHIROTEUTHIDÆ.* Eyes naked, simple above. Siphuncle simple.

IV. *ONYCHOTEUTHIDÆ.* Eyes naked, with a sinus above. Siphuncle with a valve.

V. *LOLIGIDÆ.* Eyes covered with skin, simple.

B. *Shell cellular, calcareous. Mantle with two cartilaginous Ridges on ventral side.*—SEPIAPHORA.

VI. *SEPIADÆ.* Eyes covered with skin. Head united to mantle by a broad cervical band.

C. *Shell chambered, siphoned, calcareous or horny.*—BELEMNOPHORA.

VII. *SPIRULIDÆ.* Shell spiral, whorls separate.

VIII. *BELEMNITIDÆ.* Shell straight.

OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Suborder I. *CHONDROPHORA*.

Shell internal, solid, horny or cartilaginous, either lanceolate, pennate, with a central longitudinal dorsal ridge above, and a groove beneath, sometimes thick on each side near the edges; or flat, narrow, with a narrow central longitudinal solid rib, and a similar rib on each edge. The apex solid, sometimes thickened, produced, and cartilaginous.

Teuthomorpha (pars) *Bronn, Gesch. der Nat.* 538. 1847.

Sect. I.—Ventral side of mantle supported by two internal fleshy bands. 1. Cranchiadæ. 2. Loligopsidæ.

Sect. II.—Ventral side of mantle free, with two internal cartilaginous ridges. 3. Chiroteuthidæ. 4. Onychoteuthidæ. 5. Loligidæ.

A. Mantle supported by two internal fleshy Bands on the ventral Side. Body soft, semitransparent, elongate. Fins posterior, dorsal.

Fam. I. CRANCHIADÆ.

Body large, membraneous, ventricose, rounded behind, narrowed and truncated in front. Fins terminal, affixed to a special prolongation of the body, oval, separated by a nick behind; united to the head by a narrow cervical band, and below by a fleshy band on each side of the base of the siphuncle.

Head very small; very narrow in front and behind the eyes. Eyes large, prominent, covered with a continuous skin with a small transparent spot. Buccal membranes large, acutely eight-lobed; lobes opposite to the base of the arms.

Arms. Sessile arms conical, subulate, short, unequal, without fins, and with two rows of cups; the third pair longest; three upper pairs shortly webbed together. Tentacular arms large; club finned behind, and with four series of cups.

Siphuncle very long, obliquely truncated at its extremity, with an internal valve, but no superior central band.

Shell horny, as long as the body, narrow, bilanceolate, and pointed at each end.

Cranchina *Gray, Proc. Zool. Soc.* 1847, 205. n. 801.
Cranchia *Férussac, Owen, D'Orb. Moll. Viv. et Fos.* i. 238.
Sepidæ (pars) *D'Orb. Moll. Viv. et Fos.* i. 238. 1845.
Calmars B. Les Cranchies *Blainville.*
Teuthidæ (pars) *Owen, Trans. Z. S.* ii. 4. 1838.

1. CRANCHIA.

See character of Family.

Cranchia *Leach, Zool. Misc.* iii. 137. 1817; *Tuckey, Voy.* 140. 1817; *Férussac et D'Orb. Tab. Céphal.* 58. 1825; *Owen, Trans. Zool. Soc.* ii. 21. 1836; *D'Orb. et Férussac, Céph. Acét.* 1839; *D'Orb. Moll. Viv. et Fos.* i. 238., *Moll. Antil.* 1839.

Calmars B. Les Cranchies *Blainv. Dict. Sc. Nat.* xxvii. 135.

1. Cranchia scabra.

Body and head covered above with numerous horny tubercles, divided into two, three, or four points. Body very voluminous, flask-shaped. Fins rounded, united by their sides. Eyes very large. Sessile arms unequal; order of their length, 3, 2, 4, 1; cups far apart on the margin of the arms. Tentacular arms contractile; cups smaller than those of the sessile arms. Shell horny, very narrow; narrowed in the middle, and expanded and acute at each end.

Cranchia scabra *Leach, Tuckey, Exped. to Congo*, 410. t. 1817, *Zool. Miscell.* iii. 137., *Journ. de Phys.* lxxxvi. 395., *Pl. de Juin*, n. 6.; *D'Orbigny, Tab. Méth. Class. de Céph.* 58.; *Owen, Trans. Zool. Soc.* ii. t. 21. f. 1—5.; *D'Orb. et Féruss. Céph. Acét.* n. 1., *Cranchia*, t. 1. f. 1.; *D'Orb. Moll. des Antilles*, i. 32. n. 7., *Moll. Viv. et Fos.* i. 239. t. 8. from Owen and Leach.

Loligo Cranchii *Blainv. Journ. de Phys.* 123. 1823, *Dict. Sc. Nat.* xxvii. 135.; *Férussac, Dict. Class. d'Hist. Nat.* iv. *Atlas*, f. 4.

Hab. Atlantic Ocean. Sea of West Indies.

a. Africa, Congo. In spirits. Mr. J. Cranch, from the Congo Expedition.

b. The shell of *a*.

2. Cranchia maculata.

Body smooth, very beautifully marked with black spots; ovate, distant. Head and arms ———— ?

Cranchia maculata *Leach, Tuckey, Exped. to Congo*, 410. t. 1817, *Journ. de Phys.* lxxxvi. 395.; *D'Orbigny, Tab. Méth. de la Class. de Céph.* 58., *Moll. Viv. et Fos.* i. 241.; *D'Orb. et Féruss. Céph. Acét.* 224.

Loligo lævis *Blainville, Journ. de Phys.* 123. 1823, *Dict. des Sc. Nat.* xxvi. 135.

Hab. Atlantic Ocean.

a. Africa, Congo. In spirits. The sac only. Presented by Mr. J. Cranch, from the Congo Expedition.

Fam. II. LOLIGOPSIDÆ.

Animal membranaceous, semipellucid.

Body elongate, tapering behind. Mantle supported by three muscular bands; one medial dorsal under the end of the shell, and one on each side of the ventral surface. Fins caudal, terminal, semicircular; their united outlines oval or rounded. Ears without any crest.

Head small, broad. Eyes lateral, anterior, peduncled, naked, without any lacrymal sinus. Buccal membrane very short No buccal, brachial, nor anal aquiferous pores.

Siphuncle without any superior central band; no internal valve.

Shell internal, horny, elongated, slender, pennate, solid.

Loligopsidæ *Gray, Syn. B. Mus.* 1840, *Proc. Zool. Soc.* 1847, 205.; *D'Orb. Moll. Cuba*, i. 7., *Ann. Sc. Nat.* xvi. 1841, *Moll. Viv. et Fos.* i. 367. 1847. .

Teuthidæ (pars) *Owen, Trans. Zool. Soc.* ii. 2. 1838.

1. LOLIGOPSIS.

Body very much elongated, conical, attenuated. Mantle supported by three muscular bands; one medial, dorsal, under the end of the shell, and one on each side of the ventral surface. —*Head* small, broad, very short, much depressed, narrow behind. Eyes peduncled, very large, naked. Buccal membrane seven-lobed, without cups. — Sessile *arms* conical, subulate, very contracted, rounded, very unequal. Cups oblique, peduncled, in two alternating series; rings smooth. Tentacular arms not retractile, slender, marginal, dorsal. — *Siphuncle* very large, broad, elongate, nicked on the sides, without any central superior band or internal valve. — *Shell* internal, horny, flexible, slender, keeled above; very narrow, lanceolate, thickened at the tip. — Living in the high seas.

Loligopsis (Calmaret) *Lamck. Extr. d. Cour.* 1812; *Férussac et D'Orb. Céph.* 1839.

Loligopsis *Lamck. Hist.* vii. 659. 1822; *D'Orb. Moll. Cuba*, i. 7. 1841, *Moll. Viv. et Fos.* i. 368.; *Grant, Trans. Zool. Soc. Lond.* i. 21. *Anat.* 1847; *Owen, Trans. Zool. Soc.* ii. 2.

Leachia *LeSueur, Jour. Acad. Philad.* ii. 89. 1821, not Risso, E.M. 1826; "*Lesson*," *Blainv. Malac.* 1825.

Loligo sp. *Blainville, Journ. de Phys.* 1823.

Perothis *Eschscholtz, MS.* 1827?; *Rathke, Mém. Acad. Pétersb. par divers savans*, ii. 1835.

* *Smooth.*—Loligopsis.

1. Loligopsis pavo.

Body smooth, very much elongated, conical, spotted with red. Fins terminal, short, soft, narrow, outline together heart-shaped, not notched in front. Sessile arms short, slender, three upper pair rounded. Cups much depressed, broad, oblique; rings smooth exteriorly, inner edge divided into square teeth. Tentacular arms slender. Shell elongate, very thin, nearly gelatinous, attenuated anteriorly, lanceolate posteriorly.

Loligo pavo *LeSueur*, *Journ. Acad. Nat. Sc. Philad.* ii. 96. n. 5. t. ad p. 97. 1821; *Blainv. Journal de Phys.* 1823, 33., *Dict. des Sc. Nat.* xxvii. 145.; *Féruss. Dict. Class.* iii. 67. n. 16.

Loligopsis pavo *D'Orb. & Féruss. Céph. Acét. Calmars*, t. 6. f. 1. 4., *Loligopsis*, t. 4. f. 1. 8. 1839; *D'Orb. Moll. Viv. et Fos.* i. 369. t. 23. f. 5—10.

Hab. Atlantic Ocean, Arctic Seas, Madeira.

2. Loligopsis ellipsoptera.

Body funnel-shaped, semipellucid; hinder part of the body elongate, tapering. Fins depressed, semicircular, rounded, outline together oblong. Siphuncle very large. Arms very unequal; comparative length, 2, 3, 1, 4; the second pair longest; dorsal and ventral pairs small. Shell slender, penniform, horny.

Loligopsis ellipsoptera *Adams*, *Zool. Voy. Samarang*, *Mollusca*, t. 2. t. 1. f. 1.

Hab. North Atlantic.

Mr. Adams only describes eight arms, probably the peduncled arms were destroyed. Scarcely appears to differ from *L. cyclura*.

3. Loligopsis Zygæna.

Fins half-oblong, together nearly square, narrower in front, broader and sinuous behind. Sessile arms, order of length, 1, 2, 4, 3; two upper pair longest, two lower short; the dorsal pair webbed at the base, rest free. Tentacular arms with small cups scattered on the elongated peduncles.

Loligopsis Zygæna *Verany*, *Cephal. ex Sicily*, t. 1. f. 2.

Hab. Sicily.

4. Loligopsis vermicolaris.

Neck very thin and long. Fins together subcordate. Sessile arms with very small distant cups in alternate series; ten-

tacular arms with very numerous microscopic cups. Shell very slender.

Loligopsis vermicolaris *Rüppell, Giorn. del Gabinetto di Messina*, xxvi. 1844–5.

Hab. Sicily.

** *Sides with Rows of acute Tubercles. Shell solid at Tip.*—Leachia *LeSueur*, Perotis *Esch.*

5. Loligopsis cyclura.

Body elongate, rather fusiform, attenuated behind, whitish, spotted with red; sides with a longitudinal row of eleven acute four-pointed tubercles, and many smaller ones. Fins semicircular, broad, together subrhomboidal. Sessile arms large, conical, very contractile, unequal; proportionate length, 3, 2, 4, 1. Cups nearly spherical; rings oblique. Shell elongate, thin, very narrow anteriorly, lanceolate, rather dilated behind; tip very sharp, attenuated, solid.

Leachia cyclura *LeSueur, Journ. Acad. Nat. Inst. Soc. Philad.* ii. 90. t. 6. 1821.

Loligopsis cyclura *Féruss. Dict. Class.* ii. 68. pl. f. 3. 1823; *D'Orb. Moll. Viv. et Fos.* i. 370. t. 23. f. 4.

Loligo Leachii *Blainv. Dict. Sc. Nat.* xxvi. 135., *Journ. de Phys.* 1823, p. 124.

Loligopsis Leachii *Féruss. D'Orb. Tab. de Céph.* 57. 1825.

Loligopsis guttata *Grant, Trans. Zool. Soc. Lond.* i. 21. t. 2. 1833; *D'Orb. Céph. Acét. Loligops.* t. 1. f. 1. t. 3. t. 4. f. 9—16.

Perothis pellucida *Eschscholtz, MS.* 1827.

Perothis Escholtzii *Rathke, Mém. de l'Acad. des Sc. de St. Pétersb. par divers savans*, ii. 149. 1835. 149. t. 1. f. 1—15.

Hab. Indian Ocean.

*** *Doubtful Species.*

6. Loligopsis ? Peronii.

Body fleshy, oblong; the mantle subacute at the base, and finned inferiorly. Mouth terminal, surrounded with eight sessile and equal arms.

Loligopsis Peronii *Lamck. Cours de Zool.* 123. 1812, *An. s. Vert.* vii. 659.; *Férussac, Dict. Class.* ii. 68.; *Féruss. et D'Orb. Tab. Céph.* 57.; *D'Orb. Moll. Viv. et Fos.* i. 372.

Sepia sepiola Peronii *LeSueur, Journ. Acad. Nat. Sc. Philad.* ii. 100. 1821.

Sepiola minima *LeSueur*, l. c. 100. 1821.

Loligo parvula *Péron, MS.* (fide de Blainville).
Loligo Peronii *Blainv. Journ. de Phys.* 1823, p. 124., *Dict. des Sc. Nat.* xxvii. 136.
Hab. South Seas.

7. Loligopsis ? ? chrysophtalmos.

Body elongate, narrow; a large oval eyed spot on the middle of the ventral surface.

Loligopsis chrysophtalmos *D'Orb. Moll. Viv. et Fos.* i. 373. n. 4.
Sepia chrysophtalmos *Tilesius Krusenstern, Voy. Atlas*, t. 88. f. 32. 33.
Loligopsis Tilesii *Féruss. Calmars*, t. 1. f. 2, 3, 4. 1825.
L. chromorpha *D'Orb.* l. c. 373. 1845.
Hab. Japan.

8. Loligopsis dubia.

Perothis dubia *Rathke, Mém. Acad. Imp. Pétersb. par divers savans*, ii. 148. t. 1. f. 16, 17. 1835.
Hab. ——— ?

B. *Mantle free; furnished with two internal cartilaginous Ridges on the ventral Side, and a central one in the middle of the dorsal Side.*

a. Eyes naked.

Fam. III. CHIROTEUTHIDÆ.

Animal semipellucid.
Body elongate, tapering behind. Mantle supported by two oblong cartilages placed on the inside of the mantle, with grooves on the base of the siphuncle, and a ridge or groove on the middle of the back. Fins on the sides of the hinder part of the back.
Head moderate. Ears without any crest. Eyes lateral, sessile, naked, without any lacrymal sinus. Buccal membrane short. Buccal aquiferous opening distinct.
Arms very long. Tentacular arms not retractile, external to the web.
Siphuncle without any superior central band or internal valve.
Shell internal, horny, elongate, slender, without any chambers.

Loligopsidæ (pars) *D'Orb. Moll. Viv. et Fos.* i. 377.
Cranchia sp. *Férussac, Mag. Zool.* 1834.
Loligopsis sp. *Férussac, Mag. Zool.* 1834.

Synopsis of the Genera.

1. CHIROTEUTHIS. Arms free; cartilages of the mantle dilated below. Rings of cups contracted in the middle. Shell slender, dilated at each end.
2. HISTIOTEUTHIS. Three upper pairs of sessile arms webbed nearly to the end; cartilages of mantle linear, elongate. Rings of cups convex externally. Shell broad, pennate.

A. *Shell narrow, rather dilated at each End. Base of long Arms with scattered Cups.*

1. CHIROTEUTHIS.

Body elongate, conical. Fins on the hinder part of the sides of the back.—*Head* elongate, depressed, narrowed behind the eyes, without any cervical crest. Eyes large, prominent; aperture oval, not contractile. Buccal membrane thin, seven-lobed; buccal aquiferous apertures six, distinct.—*Arms* very long. Sessile ones conical, subulate, rounded, webbed at the base; cups very small globular, oblique, strongly peduncled, in two alternate lines; ring very oblique, with a circular depression. Tentacular arms exceedingly long, very slender, cylindrical; with small alternate cups scattered on their whole length. Club lanceolate, terminating in a fleshy cup; sides with a broad membrane; cups in four rows, on long cylindrical peduncles swollen at the end, and bearing a second pedicle carrying a hood-like horny ring edged at the base, with a lateral aperture armed with teeth.—*Siphuncle* short, without superior band or valve. The cartilage on the side of the siphuncle oval, transverse, with a large tubercle on each side of the oblong cavity; mantle with an oblong cartilage, larger beneath, and with a pit on each side to receive the tubercles on the siphuncle.—*Shell* internal, horny, very slender, slightly dilated into a narrow lanceolate expansion at each end.

Chiroteuthis *D'Orb. Céphal. Acétab.* 1839, *Ann. Sci. Nat.* xvi. 1841; accidentally confounded with Cirroteuthis *Gray, P. Z. Soc.* 1847, 205.

Loligopsis sp. *Féruss. Mag. Zool.* 1834; *Verany, Acad. Torino.*

1. CHIROTEUTHIS VERANYI.

Body smooth: fins semicircular, together heart-shaped. Head large. Sessile arms very large, rounded, acuminate, unequal; order of length, 4, 3, 2, 1; rings of the three upper pairs with very close acute teeth, longest on the broader side. Tentacular

arms twelve times as long as the body, with a lanceolate club. Shell very narrow; the lowest part with the longest and broadest expansion.

Loligopsis Coindetii *Verany, MS.*
Loligopsis Veranyi *Féruss. Mag. de Zool.* 1834, t. 65., *Règne Animal de Cuv.* t. 6.
Chiroteuthis Veranyi *D'Orb. Céph. Acét. Calmars*, t. 2. t. 4. f. 17—23. 1839, *Moll. Viv. et Fos.* i. 377. t. 24.

Hab. Mediterranean.

2. CHIROTEUTHIS BONPLANDI.

Body elongate, conical. Head moderate. Fins half the length of the body, together rhomboidal. Sessile arms subulate, with rounded tubercles at the end, unequal; order of length, 3, 2, 1, 4. Shell very narrow in the middle; narrow above, and dilated below.

Chiroteuthis Bonplandi *D'Orb. Moll. Viv. et Fos.* i. 378. 1845.
Loligopsis Bonplandi *Verany, Acad. di Torino*, i. 2d ser. t. 5. 1837.

Hab. Atlantic Ocean.

B. *Shell lanceolate, pennate.*

2. HISTIOTEUTHIS.

Body short, cylindrical, pointed behind; cartilage on siphuncle with a deep groove, with raised edges; those on the mantle longitudinal, larger below. Fins large, rounded, on the sides of the ends of the body; nicked before and behind.—*Head* very large, cylindrical, without any cervical crest. Eyes large, naked, not prominent, with an external aperture without any lacrymal sinus or contractile eyelids. Buccal membrane broad, extensile, six-lobed, without any cups. Four buccal aquiferous openings, one on each side of the base of the upper and lower arms; and two brachial openings on the outside of the tentacular arms; no anal opening. — Sessile *arms* large, voluminous, rather unequal; the three upper pairs united by a web near to the end; lower pair free; cups very small, oblique, fleshy, peduncled, in two rows very far apart. Tentacular arms outside of the web; club lanceolate, finned externally, and with a membrane on the sides; cups in six alternate lines, rather oblique; rings armed with acute teeth.—*Siphuncle* very short, thick. —*Shell* horny, flexible, lanceolate, pennate; expansion, thin; narrow above, with a longitudinal central ridge.

Histioteuthis *D'Orb. Céphal. Acétab.* 1839, *Ann. Sc. Nat.* xvi.

1841, *Moll. Cuba*, i. 7. 1841, *Moll. Viv. et Fos.* i. 79. t. 253. 1848; *Desh.* in *Lamck. Hist.* xi. 237.; *Gray*, *Proc. Zool. Soc.* 1847, 205.

Histioteuthys *Verany*, *Cat. Invert.* 17. 1846.

Cranchia sp. *Féruss. Mag. de Zool.* 1835, p. 66.

1. Histioteuthis Bonelliana.

Body short, obtuse. Head very large; and head, body, and arms, scattered with tubercles. Sessile arms subequal, fleshy. Fins semicircular, broad. Shell broad, lanceolate.

Cranchia Bonelliana *Féruss. Mag. de Zool.* 1835, p. 66.

Histioteuthis Bonelliana *D'Orb. Céph. Acét. Cranchies*, t. 2. 1839, *Moll. Viv. et Fos.* i. 380. t. 25.

Hab. Mediterranean, near Nice. *Verany.*

2. Histioteuthis Ruppellii.

Body, head, and arms granular. Head large. The second and third pairs of arms longer, first and fourth shorter. Cups blue. Fins ———.

Histioteuthis Ruppellii *Verany*, *Congress. Milano*, *e Cat. Anim. Inv. Genova*, 17. 28. n. 53. t. 3.

Hab. Genoa.

Perhaps only a variety of the former.

Fam. IV. ONYCHOTEUTHIDÆ.

Body elongate, fleshy. Fins posterior, dorsal, angular, together rhomboidal. Mantle supported by cartilaginous tubercles and loops in front. Anal aquiferous opening distinct.

Head moderate, cylindrical. Eyes lateral, naked, with a deep lacrymal sinus at the upper edge. Buccal membrane large. Ears with a well marked longitudinal crest.

Tentacular *arms* with a rounded group of small sessile cups at the extremity of the club.

Siphuncle with one or two bands on each side above, and with a distinct internal valve.

Shell internal, horny, lanceolate, without any air-chambers.

Teuthidæ (pars) *Owen*, *Trans. Zool. Soc.* ii. 1838.

Teuthidæ *D'Orb. Moll. Viv. et Fos.* i. 382. 1848.

Onychoteuthidæ *Gray*, *Proc. Zool. Soc.* 1847, 206.

Synopsis of Genera.

A. *Tentacular and sessile Arms with claw-like Hooks.*

1. *Enoploteuthis.*—Fins subterminal, dorsal, rhombic. Sessile arms with hook only. Shell pennate, lanceolate.
2. *Ancistrocheirus.*—Fins occupying the whole side of the back, rhombic. Sessile arms with hooks only. Shell dilated at each end.
3. *Abralia.*—Fins subterminal. Sessile arms with hooks at the base and cups at the tip. Shell lanceolate, concave on the edges.
4. *Octopodoteuthis.*—Fins on the hind part of the back, roundish. Shell narrow.
5. *Acanthoteuthis.*—Fins ———— ? Shell narrow, gradually dilated above.

B. *Tentacular Arms with Hooks. Sessile Arms with Cups and Rings.*

6. *Onychoteuthis.*—Club of tentacular arm with hooks. Shell lanceolate, pennate, sides thin.
7. *Ancistroteuthis.*—Club of tentacular arm with hooks only. Shell narrow, rather dilated in front, with one central and two marginal ribs.
8. *Onychia.*—Club of tentacular arm with hooks on the centre, and with two rows of small cups on each side. Shell lanceolate, pennate.

C. *Tentacular and sessile Arms with Cups and horny Rings.*

9. *Ommastrephes.*—Fins rhombic, posterior, caudal. Internal cartilage of mantle dilated below. Shell narrow, dilated in front with one central and two marginal ribs.

A. *Tentacular and sessile Arms furnished with Hooks.*

1. ENOPLOTEUTHIS.

Body elongate, with regular longitudinal lines of minute tubercles beneath; sometimes produced into a more or less elongate acute tail. Fins angular, on the hinder part of the back; together rhombic.—*Head* rather large, subcylindrical. Buccal membrane eight-lobed; two upper bands distinct, and inserted between the two dorsal arms.—Sessile *arms* with a series of closed horny claw-like hooks, enlarged at their base, and

covered with a closely fitting membrane. Tentacular arms slender, feeble, scarcely clubbed, armed with hooks only.— *Siphuncle* with two superior central bands. — *Shell* pennate, lanceolate, sometimes sinuous at the side, and without any appendix at the tip; the central ridge narrow, keeled, produced in front.

Enoploteuthis *D'Orb. Moll. Viv. et Fos.* i. 398., *Céph. Acét.* 1839; *Gray, Proc. Zool. Soc.* 1847, 206.
Loligo sp. *Leach, Zool. Misc.* 1817.
Onychotheutis sp. *Férussac, Tab. Syst.* 26. 1821.
Onychoteuthis sp. *Férussac & D'Orb. Tab. Céphal.* 1825; *Verany, Mem. Acad. Torino*, 1837.
Ommastrephes (pars) *Gray, Proc. Zool. Soc.* 1847, 206.

* *Body prolonged, and subvesicular behind; tubercular beneath.*

1. Enoploteuthis Smithii.

Head with numerous lines of small tubercles, one series extending up each side of the back of the arms. Body smooth above, with seven longitudinal lines of small rounded granules beneath; the lateral lines irregular. Sessile arms square; the dorsal pair slightly margined on the outer edge; the second pair with a broad membranous edge; hooks about sixty. Tentacular arms, lower oblong group of ten small cups, half open, rest closed; hooks ten, in two alternating lines. Shell lanceolate, rather broad, outer edge regularly arched.

Loligo Smithii *Leach, Tuckey's Expedition*, Appen. 411. t. . f. adult, 1817, *Zool. Miscell.* iii. 141. sp. 3.; *Blainv. Dict. Class.* 437., *Journ. de Phys.* xcvi. 126.; *Féruss. Dict. Class.* iii. 67.
Onychoteuthis Smithii *Féruss. D'Orb. Tab. Méth. Céph.* 61. sp. 9. 1825, *Céphal. Acéph.* t. 2. f. 3. cop. from Leach.
Loligo leptura *Leach, Zool. Miscell.* iii. 141. sp. 21. p. 3. 1817; *Tuckey's Exped. Congo*, App. iv. 411. t. f. 1817, *Journ. de Phys.* lxxxvi. 395. t. i. 3. 5.; *Blainv. Dict. Sc. Nat.* xxvii. 137., *Journ. de Phys.* xcvi. 126.; *Féruss. Dict. Class.* iii. 67. n. 9., *Atlas*, t. f. 3. all from Leach.
Onychoteuthis leptura *Férussac, Céphal. Acét. Onychoteuthis*, t. 2. f. 4. 1828, cop. from Leach.
Onychoteuthis leptura *Férussac, Céph. Acét. Onychoteuthis*, t. 6. 11. f. 6—14. 1839.
Enoploteuthis leptura *D'Orb. & Féruss. Moll. Céph. Acét. Onychoteuthis*, t. 12. f. 20. 1839; *D'Orb. Moll. Viv. et Fos.* i. 399. t. 27. f. 1—9., *Paléon. univer.* t. 17. f. 1—9.

Hab. Atlantic Ocean.

a. W. Africa, lat. 1° 8′ N., long. 26° 30′ E. Adult. In

spirits. Hinder part of body produced, subvesicular. Presented by J. Cranch, Esq., Congo Expedition.

Loligo Smithii *Leach*.

b, c. West Africa, lat. 1° 8′ N., long. 26° 30′ E. Half-grown, not good state. In spirits. Hinder part of body suddenly contracted into a short tail. Presented by J. Cranch, Esq., Congo Expedition.

Loligo leptura *Leach*.

d. West Africa, lat. 1° 8′ N., long. 26° 30′ E. The head and arms only. Presented by J. Cranch, Esq., Congo Expedition.

2. ENOPLOTEUTHIS MARGARITIFERA.

Body elongate. Fins rhombic, about two-thirds the length of the body, acute on the sides. Eyes with five round tubercles on the ventral side. Sessile arms rounded behind, not finned; the third and fourth pairs much thicker. Tentacular arms scarcely enlarged above, subulate, and unarmed at the tip, with a small round group of four or five cups at the base, and three or four small hooks in the middle. Shell broad lanceolate, thin, transparent.

Enoploteuthis margaritifera *Rüppell, Giornale del Gabin. di Messina*, xxvi. 1844, 2. f. 1.

Hab. Sicily, Messina. *Rüppell.*

a, b. Messina. In spirits. From Dr. Rüppell's Collection.
c. The shell of *a.* in spirits.

3 ENOPLOTEUTHIS VERANY.

Body conical. Fins rhombic, half as long as the body, large angular on the sides. Second pair of arms finned on the outer side.

Enoploteuthis Verany *Rüppell, Giorn. del Gabin. di Messina*, xxvi. 1844, 3. f. 2.

Hab. Genoa.

4. ENOPLOTEUTHIS OWENII.

Body conical, pointed behind. Fins rhombic, more than half the length of the body, nicked in front, rounded on the sides.—Rosy white.

Enoploteuthis Owenii *Verany, Congress. di Napoli, Cat. Anim. Invert. Genova*, 17. 29. n. 54. t. 6. f. 2, 3.

Hab. Genoa. Perhaps the same as *E. Verany.*

** *Body unknown.*

5. ENOPLOTEUTHIS UNGUICULATA.

Sessile arms with hooks on the whole of its length.

Large Sepia *Banks, Voy. Cook*, 1st *Voy.* ii. 301.

Sepia unguiculata *Molina, Saggio sul Stor. Nat. del Chili*, 199. 1789; *Gmel. Syst. Nat.* edit. 13. p. 3150.; *Turton, Syst. Nat.* iv. 119.; *Bosc, Buffon, de Deterv.* v. 47. t. 1.; *Leach, Tuckey's Exped. Congo*, 411. note.

Le Poulpe unguiculé *Montfort, Buff. de Sonnin. Moll.* iii. 99. 1802.

Loligo unguiculata *Blainv. Dict. Sc. Nat.* xxvii. 140. 1823, *Journ. de Phys.* xcvii. 128.; *Féruss. D'Orb. Tab. Méth. Céph.* 61., *Ann. des Sc. Nat.* iv.

Onychoteuthis Molinæ *Lichtenst. Isis*, 1818, p. 1592. n. 2.

Enoploteuthis Molinæ *D'Orb. Moll. Viv. et Fos.* i. 402.

Hab. Pacific Ocean. A sessile arm in Mus. Col. Surg. London.

*** *Fossil Species.*

6. ENOPLOTEUTHIS SUBSAGITTATA.

Loligo subsagittata *Munster, Taschenb.* 1836, 582. 1839, t. 375., *Beitrag. Petref.* 107. t. 10. f. 3.

Enoploteuthis subsagittata *D'Orb. Paléont. univ.* t. 19., *Paléont. étrang.* t. 13., *Moll. Viv. et Fos.* i. 399.

Hab. Upper Oxford. Lithographic stone.

2. ANCISTROCHEIRUS.

Body subcylindrical. Fins occupying nearly the whole length of the sides of the back.—Sessile *arms* very large, long, rounded externally; hooks in two indistinct alternate lines; no cups. Tentacular arms long, moderate; hooks elongated.—*Shell* narrow, lanceolate, central groove very broad, slightly convex, gradually produced at the end.

Enoploteuthis sp. *D'Orb. Céph. Acét.* 1839, *Moll. Viv. et Fos.* 402.

Onychoteuthis sp. *D'Orb. Céph. Acét.* 1835.

1. ANCISTROCHEIRUS LESUEURII.

Body elongated, acuminate, produced, with regularly disposed tubercles underneath. Fins triangular Arms elongate. Shell narrow, lanceolate; central groove very broad, shallow.

Onychoteuthis LeSueurii *Féruss. & D'Orb. Céph. Acét. Onych.* t. 11. f. 1—5. animal, 1835.

Enoploteuthis LeSueurii *D'Orb. & Féruss. Céph. Acét, Onych.* t. 14. f. 4—10. details, 1839; *D'Orb. Paléont. univ.* t. 17. f. 10., *Paléont. étrang.* t. 14. f. 10., *Moll. Viv. et Fos.* i. 402. t. 27. f. 10.

Hab. Indian Ocean.

3. ABRALIA.

Body smooth above, granular beneath, with scattered larger tubercles.—*Head* granular.—Sessile *arms* elongate, with a single series of alternating hooks at the base, and a double row of hemispherical cups at the tip. Tentacular arms long, slender; club distinct, with a few long acute hooks alternating with a series of cups, and with two rows of cups only at the tip.—*Shell* lanceolate, sinuous at the edge near the tip; central ridge narrow, keeled, and produced above.

Enoploteuthis sp. *D'Orb. Céph. Acét.* 1839, *Moll, Viv. et Fos.* 402.
Onychoteuthis sp. *D'Orb. Céph. Acét.* 1835.

1. Abralia armata.

Body elongate, smooth above, minutely tuberculated underneath; the larger tubercles regularly disposed. Fins triangular, together very broadly lanceolate, terminal. Sessile arms slender; the third and fourth pairs with two marginal series of small tubercles; second, third, and fourth pairs crested externally. Tentacular arms slender, basal group of three or four cups; hooks four, long, acute. Shell lanceolate, sinuated at the sides near the top.

Onychoteuthis armata *Quoy & Gaim. Voy. Ast. Zool.* ii. 84. t. 5. f. 14—22. 1833; *Cuv. Règ. Animal, Illust.* t. 2.
Enoploteuthis armata *D'Orb. Céph. Acét. Onychot.* t. 9. f. 2. 6. t. 14. f. 11—14. details, 1839, *Paléont. univ.* t. 17. f. 11, 12., *Paléont. étrang.* t. 14. f. 11, 12., *Moll. Viv. et Fos.* i. 404. t. 27. f. 11, 12.

Hab. Indian Ocean, Moluccas.

2. Abralia Morisii.

Body conical, smooth, not enlarged behind. Fins very large, occupying two thirds of the length, triangular, together rhomboidal, strongly nicked in front. Head large, sessile. Shell lanceolate, broad, somewhat sinuated on the sides. Arms unequal, the lower ones longest.

Enoploteuthis Morisii *D'Orb. Moll. Viv. et Fos.* i. 401.

Onychoteuthis Morisii *Verany, Mem. del Acad. Torino*, t. 1. t. 4. (1837).

Hab. North Atlantic Ocean.

4. OCTOPODOTEUTHIS.

Body conical, tapering behind. Eyes naked? Skin round the eyes contractile? Fins large, rounded on the hinder part of the back, separated by a notch in front, united behind. Mantle with two oblong ridges inside, and with two grooves on the base of the siphuncle, free on the back, with central ridge fitting into a cervical groove. — Sessile *arms* cylindrical, curled at the end; with a double series of small, nearly sessile, subcylindrical cups, armed with short curved hooks. Tentacular arms very short; club small. — *Siphuncle* conical, with two medial superior bands. — *Shell* cartilaginous, very slender, as long as the back.

Octopoteuthis *Rüppell & Krohn* in *Giorn. del Gabinetto di Messina*, xxvi. 1844, 6.

Octopodoteuthis *Rüppell, MS.* 1845; *Gray, Proc. Z. Soc.* 1847, 205. n. 795.

Verania *Krohn, Erichson, Arch.* 1847; *Verany, Cephal. ex Sicilia*, t. i.

1. Octopodoteuthis Sicula.

Sessile arms rounded externally; the third pair rather the strongest. Fins rounded, about three fourths the length of the body, wider than the length of the body, continued over the back, with an acute notch behind, a rounded one above.

Octopoteuthis Sicula *Rüppell & Krohn*, in *Giorn. del Gabinetto di Messina*, xxvi. 1844, 6.

Verania Sicula *Krohn, Erichson, Arch.* 1847, t. . f. .; *Verany, Cephal. ex Sicilia*, t. 1. f. 4.

Hab. Sicily.

a. Sicily. In spirits. From Dr. Edward Rüppell's Collection.

5. ACANTHOTEUTHIS.

Fossil. *Animal* elongate, cylindrical. Fins terminal, short, angular. — *Arms* ten, rather unequal, with two lines of hooks. — *Shell* internal, horny, elongate, tapering, broad above, pointed behind, without any terminal appendix, and with a central longitudinal groove gradually becoming wider and less evident above.

Kalæno *Munster*, 1836, not Munster, 1842; *D'Orb. Paléon. Franç.* 1842, *Moll. Viv. et Fos.* i. 162.
Acanthoteuthis *Wagner*, 1839; *D'Orb. Moll. Viv. et Fos.* i. 407, 1847, *Desh.* in *Lamck. Hist.* xi. 238.
Onychoteuthis sp. *Munster*, 1837.
Loligo sp. *Rüppell*, 1829.

1. ACANTHOTEUTHIS PRISCA.

Body elongate, subcylindrical. Fins terminal, angled. Shell depressed, three-keeled, conical.

Loligo priscus *Rüppell, Abbild. und Besch.* 8. t. 3. f. 1. 1829.
Onychoteuthis angusta *Munster, Lehrb.* 404. 458. 1830, 250—630. 1836, 252. 1837.
Kelæno spinosa *Munster, MS.* 1836.
Kelæno Ferussacii *Munster, MS.* 1836.
Kelæno sagittata *Munster, MS.* 1836.
Onychoteuthis spinosa *Munster, Lehrb.* 252. 1837.
Onychoteuthis Ferussaci *Munster, Lehrb.* 252. 1837.
Onychoteuthis sagittata *Munster, Lehrb.* 252. 1837.
Onychoteuthis subovata *Munster, Lehrb.* 252. 1837.
Onychoteuthis tricarinata *Munster, Lehrb.* 252. 1837.
Onychoteuthis lata *Munster, MS.*
Kelæno speciosa *D'Orb. Paléont. Franç.* i. 140. n. 35. t. 23. f. 1—4. 1842.
Acanthoteuthis Ferussacii *Munster, Beitrag.* i. 104. t. 10. f. 1. 1839; *Chenu. Leçon. élém. H.N.* 238. f. 761.
Acanthoteuthis Lichtensteinii *Munster*, i. 105. t. 10. f. 2. 1839.
Acanthoteuthis speciosa *Munster, Beitr.* i. 105. t. 9. 1839.
Acanthoteuthis brevis *Munster, Beitr.* v. t. 1. f. 3. 1842.
Acanthoteuthis prisca *D'Orb. Paléont. univ.* t. 19, 20, 21. 1845, *Paléont. étrang.* t. 16, 17, 18., *Moll. Viv. et Foss.* i. 409. t. 28.

Fos. Upper Oxford Clay, Lithographic stone.

B. *Cup of tentacular Arms with claw-like Hooks; of sessile Arms with Rings.*

6. ONYCHOTEUTHIS.

Body elongate, subcylindrical, smooth, acuminated behind. Mantle with an elongated, narrow, prominent, longitudinal ridge, fitting into a similar groove on the base of the siphuncle. Fins terminal, very broad, together rhomboidal.—*Head* large, rather depressed, with three or eleven longitudinal ridges, and edged behind by a transverse ridge. Eyes large, lateral. Buccal membrane extensile, seven-lobed, without cups. A brachial aquife-

rous pore on each side, between the third and fourth pairs of arms. Six buccal pores and an anal pore above the siphuncle. — Sessile *arms* angular; third or fourth pair with a keel or fin; cups in two alternating lines; rings convex and toothless. Tentacular arms partly retractile, strong; club enlarged, with a rounded group of small sessile cups at each end, and two series of claw-like hooks, the outer series largest. — *Siphuncle* very short, lodged in a cavity, with two superior muscular bands. — *Shell* lanceolate, pennate, as long as the back; tip acute; end produced, narrow; sides dilated, thin, with a central longitudinal keel contracted at the end.

Onychoteuthis (pars) *Licht. Berl. Acad.* 1818; *Isis*, 1819, 1591. 1820; *Blainv. Malac.* 1825; *Desh.* in *Lamck. Hist.* xi. 237.; *D'Orb. Moll. Viv. et Fos.* i. 386.
Sepia sp. *Fabricius, Faun. Groenl.* 359.; *Molini.*
Loligo sp. *Leach, Blainville, LeSueur, Ann. Sci. Philad.*
Onykia sp. *LeSueur, Ann. Sci. Philad.* ii. 99. 1821, ii. 296. 1822.
Onyckia *Lesson, Berthold*, 1827?; *Latr. Fam. Nat.* 1825, not Hübner, 1816, nor Walker, 1835.
Ancistrochirus *Leach, MS. Brit. Mus.* 1817.
Onychotheuthis *Férussac, Tab. Syst.* 24. 1821.

1. Onychoteuthis Banksii.

Body very elongate, cylindrical, acuminate behind. Head with eleven longitudinal small prominent ridges. Fins rhomboidal. Sessile arms conico-subulate, unequal; in length, 2, 3, 4, 1; cups with a fleshy excrescence, compressed, pear-shaped. Tentacular arms very extensile, apical, armed with a double series of hooks; the basal group consisting of about seven or eight open and seven or eight not pierced cups, the apical group of sixteen or seventeen cups all open; hooks twenty to twenty-two in two rows, those of the outer row largest.

Loligo Banksii *Leach, Zool. Miscell.* iii. 141. sp. 4. 1817; *Tuckey's Voy. to Congo*, App. iv. 411. sp. 1.; *Blainv. Dict. Sc. Nat.* xxvii. 137., *Journ. de Phys.* lxxxvi. 125.; *Féruss. Dict. Class.* 67. n. 8.
Oncistrochirus Banksii *Leach, MS. B. Mus.* 1817.
Anichoteuthis Banksii *Férussac, Tab. Céph.* 61. 1825.
Onychoteuthis Bergii *Lichtenst. Zool. Mus. des Univ. zu Berlin*, p. 1592. n. 4. t. 19. f. a. 1818; *Féruss. D'Orb. Tab. Céph.* n. 5. p. 61.; *D'Orb. Moll. des Antilles*, i. 46. n. 12.; *D'Orb. et Féruss. Céph. Acét. Onychoteuthis*, t. 5. f. 1—9. from Licht.
Loligo Bergii *Blainv. Dict. Sc. Nat.* xxvii. 138. 1823, *Journ. de Phys.* lxxxvi. 126.; *Féruss. Dict. Class.* iii. 67.
Sepia loligo *Fabricius, Faun. Groenl.* 359.

Dinten-Fish *Crantz, Hist. von Groenl.* 134.
Onychoteuthis Fabricii *Lichtenst. Isis*, 1818, t. 19.; *Féruss. D'Orb. Céph.* 61. n. 10.
Loligo Fabricii *Blainv. Dict. Sc. Nat.* xxvii. 126. 1823.
Onykia angulata *LeSueur, Journ. Acad. Philad.* ii. 99. t. 9. f. 3. 296. t. 178. on a figure, 1821.
Loligo angulatus *Féruss. Dict. Class.* iii. 67. 1823.
Onychoteuthis angulata *Féruss. Céph. Acét. Onych.* t. 1. 1825; *D'Orb. Tab. Céph.* 60. n. 2., *Voy. Amér. Mérid. Mol.* 42.; *Guérin, Icon. Règ. Anim.*
Loligo felina *Blainv. Dict. Sc. Nat.* xxvii. 139. 1823, *Journ. de Phys.* lxxxvi. 125.
Onychoteuthis felina *Féruss. D'Orb. Tab. Céph.* 60. n. 4. 1825.
Onythoteuthis Molinæ *Leach, Berl. Trans.* 1818, t. 4. copied O. Bergi *Féruss. Céph. Acét. Onyth.* t. 5.
Loligo uncinatus *Quoy & Gaim. Voy. Uranie, Zool.* i. 410. t. 66. f. 7. 1838.
Onychoteuthis uncinata *Féruss. D'Orb. Tab. Céph.* 60. n. 3. 1825.
Onychoteuthis Lessonii *Féruss. D'Orb. Tab. Céph.* 61. n. 6. 1825, *Lesson, Voy. de la Coq.* t. 1. f. 3. from a drawing.
Onychoteuthis Fleurii *Renaud, Lesson, Centurie Zool.* 61. t. 17.; *Féruss. Céph. Acét. Onyth.* t. 9.

Hab. Atlantic and Indian Oceans.

a. Africa. Small. In spirits. Presented by J. Cranch, Esq., Congo Expedition.
L. Banksii *Leach*, 1817.

b. The shell of *a.* dry.
Ancistrochirus Banksii *Leach, MS.* 1817.

2. ONYCHOTEUTHIS BARTLINGII.

Body elongate; back with a central transparent line over the keel of the shell. Fins posterior, rhombic, angular. Sessile arms slender; dorsal pair rounded externally, with a slight fin on the upper part; the second, third, and fourth pairs finned on the outer side nearly the whole length. Tentacular arms with six large hooks. Shell dark brown, lanceolate, pennate, with a short central keel above and ridge beneath, thin.

O. Bergii *Licht.*? *Féruss. Céph. Acét. Onyth.* t. 7.
Loligo Bartlingii *LeSueur, Jour. Acad. Phil.* 95. t. cop. *Féruss. Céph. Acét.* t. 3.
Onythoteuthis Bartlingii *Féruss. Céph. Acét. Onyth.* t. 3.
Onythoteuthis Banksii (pars) *D'Orb. Moll. Viv. et Fos.* i. 386. t. 26. f. 1. 7. from *Féruss. Céph. Acét.* t. 7.
Onythoteuthis LeSueurii *Féruss. Céph. Acét.* t. 4. from LeSueur's specimen.

Hab. Indian Ocean.

a. Borneo. ? In spirits. Half-grown. Presented by Capt. Sir Edward Belcher, C.B. R.N.

b. Shell of *a.*

c. New Zealand. In spirits. Adult. Presented by A. Sinclair, M.D. R.N.

d. Shell of *c.*

7. ANCISTROTEUTHIS.

Body smooth.—Tentacular *arms* with a round group of small cups with rings at the base and apex of the club; and with two alternating series of hooks; the upper series the largest.—*Shell* horny, linear, very narrow, gradually widening to the front or upper end; sides thickened on the edge; apex conical, long, and obliquely produced, horny.—Otherwise like *Onychoteuthis.*

* *Body smooth.*

1. Ancistroteuthis Lichtensteinii.

Head large, with eight longitudinal ridges. Body elongate, narrowed posteriorly, produced. Fins triangular, together rhomboidal. Sessile arms subulate, unequal; in length, 4, 3, 2, 1; cups very much crowded; rings with entire edges; dorsal pair rounded behind; second pair slightly; third pair broadly webbed in the middle, externally; fourth pair webbed externally at the base. Tentacular arms; the basal group of cups twenty-one, about half closed; the apical group sixteen or seventeen, all open, and with rings; hooks twenty-two. Shell depressed, narrowed, transparent; apex longly produced, solid, cartilaginous, compressed.

Onychoteuthis Bellonii *Féruss. & D'Orb. Céph. Acét.* 1835.

Onychoteuthis Lichtensteinii *Féruss. MS.* 1834; *Féruss. et D'Orb. Céph. Acét. Onych.* t. 8. anim., t. 14. f. 1—3. shell, 1839; *D'Orb. Moll. Viv. et Fos.* i. 391. t. 26. f. 8—12.

Hab. The Mediterranean, near Nice.

a. Mediterranean, Messina. In spirits. Adult.

b. The shell of *a.*

c. Mediterranean. In spirits. Adult. Presented by P. B. Webb, Esq.

2. Ancistroteuthis Krohnii.

Tentacular arms short; club with a series of hooks on one, and of small cups on the other, margin. Shell linear, narrow at the base, margined on the edge, rather wider above the middle; the apex with a conical produced tip.

Onychoteuthis Krohnii *Verany, Ceph. ex Sicilia*, t. 1. f. 3.

Hab. Sicily.

** *Body shagreened.*

3. ANCISTROTEUTHIS DUSSUMIERI.

Body elongate, subcylindrical; very finely shagreened with very crowded, small, acute tubercles. Fins short, together rhomboidal. Sessile arms unequal; in length, 2, 4, 3, 1; with a longitudinal groove. Tentacular arms very slender, without any club, with thirty hooks in two series; rings of cups oblique, entire. Shell narrow; the apex with a very long conical very acute solid horny tip.

Onychoteuthis Dussumieri *D'Orb. Moll. Viv. et Fos.* i. 392.; *D'Orb. et Féruss. Céph. Acét. Onych.* t. 13. 1839.

Hab. Indian Ocean, 200 miles north of Mauritius.

8. ONYCHIA.

Body red, spotted.—Tentacular *arms* scarcely enlarged at the end, with two longitudinal series of claw-like hooks in the centre of the club, and a row of pediceled cups on each side furnished with horny rings.—*Shells* lanceolate, pennate, dilated above and narrow in front, with a central ridge.—Otherwise like *Onychoteuthis.*

Onykia *LeSueur, Jour. Acad. N. S. Philad.* i. 98. 1821, ii. 296. 1822.

Onychia *Latr. Fam. Nat.* 1825; *Berthold*, 1827; *Gray, Proc. Zool. Soc.* 1847.

Onychoteuthis sect. ii. *D'Orb. Moll. Viv. et Fos.* i. 386.

Onychoteuthis sp. *Férussac, Tab. Syst.* 28. 1821; *D'Orb. et Féruss. Céph. Acét.* 1839.

Sepiola sp. *LeSueur*, l. c.

Cranchia *Péron.*

Cranchia sp. *Férussac, Dict. Class. H. N.* v.

Loligo sp. *Péron.*

Sepia sp. *Oken.*

Sepiola sp. *LeSueur.*

* *Fins terminal, very short. Cups subequal.*

1. ONYCHIA CARDIOPTERA.

Body large, oblong, narrowed, and prolonged behind, variegated with red spots; fins round, terminal, together subrhomboidal. Sessile arms unequal; in length, 3, 2, 4, 1; cups in two alternating lines. Tentacular arms long, scarcely enlarged at the end. Shell pennate, rather broad, sides rounded.

Loligo Cardioptera *Péron, Voy. Atlas*, t. 60. f. 5. 1804; *Blainv. Journ. de Phys.* 123., *Dict. des Sc. Nat.* xxvii. 135.
Sepiola Cardioptera *LeSueur, Journ. Acad. Nat. Sc. Philad.* ii. 100. 1821.
Cranchia Cardioptera *Féruss. Dict. Class. Atlas*, t. 5. 1823; *D'Orb. Tab. Méth. Céph.* 58.; *Féruss. et D'Orb. Céph. Acét. Cranchie*, t. 1. f. 2, 3. cop. Péron; *D'Orb. Voy. Am. Mérid. Moll.* 34.
Sepia Cardioptera *Oken, Lehrb. des Zool.* 343. n. 5.
Onychoteuthis Cardioptera *D'Orb. Moll. des Antilles*, i. 53. n. 13. 1838, *Moll. Viv. et Fos.* i. 389.
Onykia Caribæa *LeSueur, Journ. Acad. Nat. Sc. Philad.* ii. 98. t. 9. f. 1, 2. 1821.
Loligo Caribæa *Blainv. Dict. Sc. Nat.* xxvii. 139. 1823, *Journ. de Phys.* lxxxvi. 127.; *Féruss. Dict. Class.* iii. 67. *Atlas*, f. 4.
Onychoteuthis Caribæa *Féruss. Céph. Acét. Onyth.* t. 5. f. 4. 7. from LeSueur; *D'Orb. Tab. des Céph.* 60., *Moll. des Antilles*, i. 57. n. 14.
Onychoteuthis Leachii *Féruss. Céph. Acét. Onych.* t. 10. f. 1. 4., shell represented as expanded at each end.

Hab. Atlantic Ocean.

** *Fins dorsal. Cups of lateral Arms unequal.*

2. ONYCHIA PLATYPTERA.

Body cylindrical, smooth; fins elongate, triangular, together narrow lozenge-shaped. Sessile arms long, unequal; in length, 3, 4, 2, 1; cups very unequal, especially of the lateral arms. Tentacular arms short, not enlarged at the end; basal group of twenty-two cups half open, rest closed; hooks twelve. Shell broad, lanceolate; apex with a conical, horny, compressed appendix at the tip.

Onych. platyptera *D'Orb. Voy. Am. Mérid. Moll.* 41. t. 3. f. 8. 11. 1835; *D'Orb. et Féruss. Céph. Acét. Onych.* t. 10. f. 8–10. t. 14. f. 16–22. details; *D'Orb. Moll. Viv. et Fos.* i. 393. t. 26. f. 13.
Onych. peratiptera *D'Orb. Voy. Am. Mér.* 39. t. 3. f. 5–7. cop. 1835; *Féruss. et D'Orb. Céph. Acét. Onythoteuthis*, t. 10. f. 5. 7.

Hab. Coast of Chili. Indian Ocean.

C. *Cups of tentacular and sessile Arms with horny Rings.*

9. OMMASTREPHES.

Head short, cylindrical, rather depressed, rather narrowed behind the eyes, and there very prominent longitudinal ridges on the nape. Eyes very large, lateral, naked, with an oval external opening and a large lacrymal sinus. Buccal membrane very extensi-

ble, seven-lobed, without cups.—*Body* elongate, cylindrical, very long, acuminated behind, truncated, square in front. Cartilages on base of siphuncle, contracted below and with a tubercle on each side, on inside of mantle enlarged, thick, and with transverse rib below. Fins posterior, terminal, very broad, together forming a transverse rhomboid. Aquiferous pores between the third and fourth pairs of arms; four buccal pores, one on each side of the base of the first pair, and one on each side between the third and fourth pair, communicating with a large cavity which surrounds the mouth; two anal pores on each side of the siphuncle, outside of the external band. — Sessile *arms* conical, subulate, upper and lower quadrangular, the others triangular, compressed, unequal; in the following order, 3, 2, 1, 4; cups very oblique, fleshy, distinct; rings oblique, toothed. Tentacular arms not retractile, short, strong, thick, with a slight longitudinal ridge, scarcely enlarged at the end, webbed at the tip; cups oblique, fleshy, in four alternate lines, two middle series large, two lateral small, with a rounded basal and apical group of small sessile cups.—*Siphuncle* lodged in a cavity, short, broad, with superior medial bands, and an internal valve above.—*Shell* horny, flexible, as long as the body, narrow, gradually wider above, with a central and two marginal ribs; apex with a hollow conical cavity, without any septa.

Living in the high seas in large troops, nocturnal; the food of Cetacea and pelagic birds.

Calamar flesches *Blainv. Dict. Sci. Nat.* 1823.
Cycria *Leach, MS.* 1817.
Ommastrephes *D'Orb. Moll. Viv. et Fos.* i. 412. 1845; *Desh.* in *Lamck. Hist.* xi. 239; *Gray, Proc. Z. Soc.* 1847, 206.
? Peroteuthis *Ehrenb.*
Loligo sp. *Lamck., Rüppell.*
Sepia sp. *Linn.*
Onychoteuthis sp. *Munster.*

§ *Body opaque, fleshy, smooth above and below. Cups of sessile Arms equal, moderate.*

* *Second and third Pairs of sessile Arms without any membranaceous Fringe on the inner Edge of the ventral Side, but only a Series of small conical Tubercles.*

† *The tentacular Arms with eight Rows of numerous small Cups at the End near the Tip.*

1. Ommastrephes sagittatus.

Head large. Body elongate, cylindrical. Fins broad, together rhomboidal. Sessile arms thick, long; rings of cups variable.

Tentacular arms elongate, compressed; club scarcely enlarged, covered only with cups, the lower ones in two series, the central in four; large of central scarcely oblique, the small lateral ones very oblique; upper part with a multitude of small cups in eight rows. Shell narrow, elongate; lateral ribs largest; apical cone large.

Sepia loligo *Linn. Syst. Nat.* edit. 12. 1095. n. 4. 1767.; *Gmel. Syst. Nat.* edit. 13. 3150.; *Brug. Enc. Méth.* t. 77. f. 12.

Sepia media *Barbut, Gen. Verm.* 75. t. 8. f. 3. 1788.

Loligo sagittata var. β. *Lamck. Mém. Soc. Hist. Nat. Paris*, 13. 1799, *Anim. s. Vert.* vii. 665.; *Blainv. Faun. Franç.* 15.; *Payraudeau, Cat. Moll. Corse*, 173. n. 353.; *Risso, Hist. Nat.* iv. 6. n. 8.; *Guérin, Icon. Règ. Anim.* t. 1. f. 5.; *Philippi, Enum. Moll. Sic.* 241. n. 2.; *Cantraine, Nouv. Mém. Acad. Brux.* xiii. 15. n. 1.

Calmar harper *Montfort, Buff. de Sonnin.* ii. 65. t. 14. 1805.

Loligo illecebrosa *LeSueur, Journ. Acad. Philad.* ii. 95.. 1821? *Blainv. Dict Sc. Nat.* xxvii. 142., *Journ. de Phys.* 1823, p. 130.; *Féruss. D'Orb. Tab. des Céph.* 63. n. 5., *Céph. Acét. Loligo*, t. 7. from LeSueur.

Loligo harpago *Féruss. Dict. Class.* iii. 67. n. 3. 1823.

Loligo Brongniartii *Blainv. Dict. Sc. Nat.* xxvii. 142. 1823, *Journ. de Phys.* 1823, p. 130.; *Féruss. D'Orb. Tab. des Céph.* 63., *Céph. Acét.* t. 4. 1825.

Loligo piscatorum *La Pylaie, Ann. Sc. Nat.* iv. 319. 1825; *Féruss. D'Orb. Tab. Méth. Céph.* 63. n. 6., *Céph. Acét. Loligo*, t. 5.

Loligo Coindetii *Verany, Mem. Acad. Sc. Torino*, t. 1. f. 4. 1837.

Ommastrephes sagittatus *D'Orb. & Féruss. Ommastrephes*, t. 1. f. 1—10. rings, &c. 1839; *D'Orb. Paléont. univ.* t. 22. f. 12—16., *Paléont. étrang.* t. 19. f. 12—16., *Moll. Viv. et Fos.* i. 418. t. 29. f. 12—16.

Hab. Atlantic Ocean, Newfoundland, used in the codfishery. Mediterranean.

†† *Tentacular Arms with Cups in four Rows, those in the Centre of the middle Part rather larger.*

2. OMMASTREPHES ÆQUIPODA.

Body elongate, rather tapering behind. Fins rhombic, one third the length of the body. Tentacular arms short, naked half their length; club compressed, winged externally, with four series of regularly disposed cups, those of the sides and end equal-sized, the twentieth or twenty-second in the two central series of the middle part larger.

Loligo æquinoda *Rüppell, Giorn. del Gabin. di Messina*, xxvi. 1844.

Hab. Sicily.

a. Sicily, Messina. In spirits. From Dr. E. Rüppell's Collection.

††† *Tentacular Arms with two Series of small Cups at the Top.*

3. Ommastrephes todarus.

Body short, thick, nearly cylindrical, spotted with red. Fins half the length of the body, broad, together rhomboidal. Sessile arms unequal; rings of cups with seven distant very oblique cutting teeth on the higher side. Tentacular arms robust, with cups nearly to the base; scarcely clubbed; cups at the base in two series, in the middle in four series, middle ones larger, with the rings with twenty acute teeth all round; at the top in two series of minute cups.

Sepia loligo *Linn. Syst. Nat.* edit. xii. 1095. n. 4. 1767; *Gmel. Syst. Nat.* edit. 13. 3150. n. 4.; *Shaw, Nat. Miscell.* t. 363.

Loligo sagittata var. *a. Lamch. Mém. Soc. Hist. Nat. Paris*, 13. 1799; *Hist. An. s. Vert.* vii. 663.; *Féruss. Dict. Class.* iii. 67. n. 2.; *Carus, Icon. Sep. Nov. Acet. Phys. Med.* xii. 318. t. 30.; *Payraudeau, Cat. desc. Moll. Corse*, n. 352.

Calmar flèche *Montfort, Buff. de Sonnin. Moll.* ii. 56. 1805.

Calmar du Brésil *Montfort, Buff. de Sonnin. Moll.* ii. 56. 1805.

Loligo todarus *Rafinesque, Préc. Découv. Som.* 1814; *Féruss. Céph. Acét. Loligo*, t. 1.

Loligo Brasiliensis *Féruss. Dict. Class.* iii. 67. n. 3. 1823.

Loligo maxima *Blainv. Dict. Sc. Nat.* xxvii. 140. 1823, *Journ. de Phys.* 1823, 129.

Ommastrephes todarus *D'Orb. Céph. Acét. Ommastrephes*, t. 2. f. 4—10. 1839, *Paléont. univ.* t. 22. f. 3. 11. t. 23. f. 5, 6., *Paléont. étrang.* t. 19. f. 3—11. t. 20. f. 5, 6, *Moll. Viv. et Fos.* i. 423. t. 29. f. 3—11. t. 30. f. 5, 6.

Hab. Mediterranean.

** *The third Pair of sessile Arms with a narrow fleshy Fin supported by cross Ribs on the inner Edge of the ventral Side; second without Rudiments of Points on the Edge.*

4. Ommastrephes giganteus.

Body elongate, cylindrical superiorly, violet-coloured. Fins broad, occupying half the length, nicked in front, together transverse

rhomboidal, acute. Sessile arms, cups oblique, equal-sized; rings with acute teeth on the higher side, and smooth on the lower one. Tentacular arms naked one third their length; cups in two series, then in four; the eighteenth or twentieth central cup of the upper part very large, lateral one very small, longly peduncled and very oblique, the tip compressed, with a narrow triangular patch of a few small cups in three or four series at the base, and two series at the end.

Pernetti, Hist. Voy. aux Malouines, ii. 76. ? 1770.

Sepia tunicata *Molina, Hist. Nat. du Chili*, 173. ? 1789; *Gmelin, Syst. Nat.* edit. 13. 3151. sp. 8. ?; *Shaw, Nat. MS.* x. iv. t. 546. ? from Montfort, Sonnini.

Sepia nigra *Bosc, Hist. Nat. des Vers*, i. 47. ? 1802.

Calmar reticulé *Montfort, Buff. de Sonnin. Moll.* ii. 96. t. 21. ?

Ommastrephes gigas *D'Orb. Voy. Am. Mérid. Moll.* 50. t. 4. 1835.

Ommastrephes giganteus *D'Orb. Céph. Acét.* t. 1. f. 11—13. rings, 1839, *Paléont. univ.* t. 23. f. 1—4., *Paléont. étrang.* t. 20. f. 1—4., *Moll. Viv. et Fos.* i. 425. t. 30. f. 1—4.

a. Valparaiso. Young? In spirits. Mr. Bridges's Collection.

b. Shell of *a*.

5. Ommastrephes Sloanii.

Body cylindrical, rather tapering behind. Fin rhombic, rather more than one third the length of the body. Sessile arms compressed; cups equal, oblique, in two rows; rings black, higher side with regular acute teeth, lower smooth; third pair acutely finned, with a narrow rayed membrane on the inner edge of the ventral side. Tentacular arms slightly keeled externally, base half-naked; cups of lower part small, in two rows, of middle four rows; the seventh pair of the central series largest; rings with distant teeth all round; of the lateral series small, longly peduncled, and very oblique; of the apical portion small, in three or four rows, the smallest one nearly sessile.

Hab. Indian Ocean.

a. New Zealand, Waitemata. Small. In spirits. Presented by A. Sinclair, M.D.

b. ? Var. ? In spirits, adult. Mus. Sloane. Fin nearly half the length of the body.

Cycria *Leach, MS.* 1817.

c. ? Shell of *b*. broken, dry; taken out by Dr. Leach.

*** *The second and third Pairs of sessile Arms with a broad membranaceous Fin on the inner Edge of the ventral Side* (protectrice de cupule, *D'Orb.*), *supported by radiating fleshy Rays arising from the Base of the Cups. Cups in two distinct Rows; ventral Part of the Mantle free from the Head.*

6. OMMASTREPHES BARTRAMII.

Body elongate, cylindrical, acuminate posteriorly, truncated anteriorly, longitudinally adorned above with a violet zone. Fins dilated, rhomboidal, acutely angled. Head short. Shell thin, elongated.

Cornet *Pernetti, Hist. Voy. aux Iles Malouines*, ii. 76. t. 11. f. 6. 1770.

Loligo Bartramii *LeSueur, Journ. Acad. Philad.* ii. 90. t. 7. 1821; *Féruss. Dict. Class.* iii. 67. n. 12.; *Blainv. Dict. Sc. Nat.* xxvii. 141., *Journ. de Phys.* 1823, 129.; *Féruss. D'Orb. Tab. des Céph.* 63., *Céph. Acét. Loligo*, t. 2. cop. LeSueur.

Loligo sagittatus *Blainv. Dict. Sci. Nat.* xxvii. 140. 1823, *Journ. de Phys.* 1823, p. 128.

Loligo vitreus *Rang, Mag. de Zool.* 71. t. 36. 1837.

Ommastrephes Bartramii *D'Orb. Voy. Am. Mérid. Moll.* 55. 1838, *Moll. des Antilles*, i. 59. n. 15., *Céph. Acét. Ommastr.* t. 2. f. 11—20. rings, *Paléont. univ.* t. 22. f. 1, 2. t. 23. f. 7, 8., *Paléont. étrang.* t. 19. f. 1, 2. t. 20. f. 7, 8., *Moll. Viv. et Fos.* i. 420. t. 29. f. 1, 2, t. 30. f. 7, 8.

Cycria sepiostem *Leach, MS.* 1817.

Ommastrephes cylindricus *D'Orb. Voy. Am. Mér. Moll.* 54. t. 3. f. 3, 4. 1835.

Hab. Atlantic Ocean, Mediterranean.

a. In spirits. ———— ?

b, c, d, e. Cape of Good Hope. In spirits. Presented by Andrew Smith, M.D.

f. ———— ? In spirits, bleached. Mus. Leach. The suckers in an alternating series ?
Cycria sepiosteon *Leach, MS.* 1817.

g, h. ———— ? In spirits. Voyage, Erebus and Terror. Presented by Capt. Sir James Ross, C. B. R. N.

i. ———— ? In spirits. Mus. Leach.

j. ———— ? In spirits. Mr. Bartlett's Collection.

k. ———— ? In spirits. Presented by the Earl of Derby.

4* *The second and third Pairs of sessile Arms with a broad membranaceous Fin on the inner Edge of the ventral Side, supported by radiating fleshy Rays. Cups compressed, so as to be in a single Series; ventral Part of the Mantle fixed to the Head.*

7. OMMASTREPHES OUALANIENSIS.

Body elongated, cylindrical. Pinnæ terminal, broad, transverse. Arms short, unequal, furnished with one row of cups. Shell elongate, narrow.

Ommastrephes oualiensis *D'Orb. Moll. Viv. et Fos.* i. 427.
Loligo oualaniensis *Lesson, Voy. de Coquille, Zool.* 240. t. 1. f. 2. 1830; *Féruss. Céph. Acét.* t. 3.
Loligo Vanicoriensis *Quoy & Gaim. Voy. Ast. Moll.* ii. 79. t. 5. f. 1, 2. 1833.
Loligo brevitentaculata *Quoy & Gaim.* l. c. 81. 1833.
Ommastrephes oceanicus *D'Orb. Céph. Acét. Calmars*, t. 21. Ommastrephes, t. 1. f. 14—16., rings, 1839.

Hab. Throughout the Indian Ocean.

a. ——————. In spirits. Mus. Leach.
b. ? Cape of Good Hope. In spirits, not in a good state. Presented by the Earl of Derby.
c. South Sea. In spirits, bad state. Presented by A. Menzies, Vancouver's Voyage.

§§ *Body transparent, tubercular beneath. One or two Cups on the second Pair of sessile Arms larger.*—Hyaloteuthis.

8. OMMASTREPHES PELAGICUS.

Body elongate, subcylindrical, smooth above, with scattered opaque tubercles, in eight cross lines beneath. Fins about a quarter the length of the body, very thin, nicked in front, together transverse, rhomboidal, with rounded angles. Sessile arms triangular; cups in two alternate lines, longly peduncled. Tentacular arms very slender, scarcely clubbed, with a series of peduncled cups. Diaphanous white, red-spotted. Shell very thin, very slender, without any ribs, with a small terminal cone.

Sepia pelagica *Bosc, Buff. de Détery. Hist. Nat. Vers*, i. 46. t. 1. f. 1, 2. 1802.
Calmar pelagica *Montfort. Buff. de Sonnin. Moll.* ii. 86. t. 19. 1805.
Loligo pelagicus *Féruss. Dict. Class.* iii. 67. n. 7. 1823; *D'Orb. Tab. Céphal.* 63. n. 7, *Céph. Acét.* t. 18. f. 1, 2.

Ommastrephes pelagicus *D'Orb. Céph. Acét. Ommastrephes*, t. 1. f. 17, 18. animal, 1839, *Moll. Viv. et Fos.* i. 422.

Hab. Atlantic Ocean.

a. St. Lucia. In spirits, not good state. Presented by Miss R. Alexander.

3 § *Doubtful recent Species.*

9. Ommastrephes laticeps.

Body subgelatinous, bluish white, red, and brown, spotted, oval, elongate, ending in an acute point. Sessile arms equal. Tentacular arms with small cups. Fins thin, rounded, terminal.—A young animal.

Ommastrephes laticeps *D'Orb. Moll. Viv. et Fos.* i. 428.
Loligo laticeps *Owen, Trans. Zool. Soc. Lond.* t. 21. f. 6—10. 1836.
Cranchia pellucida *Rang, Mag. de Zool.* 67. t. 94. (1837).

Hab. Atlantic Ocean, near equator.

10. Ommastrephes arabicus.

Body round, gradually attenuating into an obtuse round tail. Fins rhomboidal, including half the body and the tail. Sessile arms with two rows of equal cups. Club of tentacular arms with five rows of cups, three middle rows largest; rings toothed. Shell narrow, cartilaginous.

Pteroteuthis arabica *Ehrenberg, Symbolæ Physicæ*, 1831.
Ommastrephes arabicus *D'Orb. Moll. Viv. et Fos.* i. 428. n. 12.

Hab. Red Sed, volcanic island of Ketumbal.

11. Ommastrephes Meneghinii.

Body ovate, conical, tapering behind. Fins posterior, half the length of the body, together oblong, rounded on the sides.

Loligo Meneghinii *Verany, Ceph. ex Sicilia*, t. 2. f. 1.

Hab. Sicily.

12. Ommastrephes Bianconii.

Body ovate, tapering behind. Fins posterior, together triangular, acute behind, and rounded at the outer upper angles. Shell narrow, lanceolate, wider above, contracted, and ending in a cone at the tip.

Loligo Bianconii *Verany, Ceph. ex Sicilia*, t. 2. f. 3.

Hab. Sicily.

13. OMMASTREPHES ? EBLANÆ.

Loligo Eblanæ *Ball, Proc. Roy. Irish Acad.* 1839; *Thompson, Report of the Brit. Assoc.* 1844, p. 248.; *D'Orb. Moll. Viv. et Fos.* i. 353.

Not described.

Hab. Coast of Ireland.

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14. OMMASTREPHES GRONOVII.

Tentacular arms half as long as the body.

Sepia *Gronov. Zoophyl.* 244. n. 1028. 1781.

Loligo Gronovii *Férussac, D'Orb. Moll. Viv. et Fos.* i. 352. 1845.

Hab. Indian Ocean.

4 § *Fossil Species of Upper Oxford Clay.*

15. OMMASTREPHES ANGUSTUS.

Shell elongate, depressed, with three ribs, dilated behind and before.

Onychoteuthis angusta *Munster, Jahrb.* 1830, 404. 458. 1836, 250. 630. 1837, 252.

Ony. Lichtensteinii *Munster, MS.* 1837.

Ony. sagittata *Munster, Jahrb.* 1837, 252. not Lamck.

Ommastrephes angustus *D'Orb. Paléont. univ.* t. 23. f. 9. 11. 1845, *Moll. Viv. et Fos.* i. 415.

Fos. Coralline layer of Upper Oxford, Solenhoffen.

16. OMMASTREPHES INTERMEDIUS.

Shell elongate, conical above, convex, one-ribbed; behind narrow, lanceolate.

Onychoteuthis intermedia *Munster, Lehrb.* 1837, 252.

Omm. intermedius *D'Orb. Céph. Acét.* 40. 1841, *Paléont. univ.* t. 24. f. 1., *Moll. Viv. et Fos.* i. 416.

Fos. Lithographic slate, Solenhoffen.

17. OMMASTREPHES COCHLEARIS.

Shell one-ribbed, dilated before and behind; behind lanceolate.

Onychoteuthis cochlearis *Munster, Lehrb.* 1837, 252.

Omm. cochlearis *D'Orb. Céph. Acét.* 40. 1841, *Paléont. univ.* t. 24. f. 2., *Moll. Viv. et Fos.* i. 417.

Fos. Lithographic slate, Solenhoffen.

18. OMMASTREPHES MUNSTERII.

Shell dilated, short, spoonlike before, dilated, and longitudinally rayed; behind dilated, blunt.

Omm. Munsterii *D'Orb. Paléont. univ.* t. 24. f. 3. 1845, *Moll. Viv. et Fos.* i. 417.

Fos. Lithographic slate, Solenhoffen.

Intermediate between *Ommastrephes* and *Geoteuthis*.

b. *Eyes covered with the Skin.*

Fam. V. LOLIGIDÆ.

Body subcylindrical, oblong, rounded behind. Fins on the sides of the hinder part of the back.

Head subcylindrical. Eye without eyelid, covered by the skin, simple above. Buccal membrane distinct, often furnished with cups. Ears with a transverse ridge.

Sessile *arms* with two rows of cups. Rings not convex externally, and provided with a narrow prominent edge on the middle of their width. Tentacular arms only partly contractile into the subocular cavity.

Siphuncle attached to the head by a double superior medial band.

Shell internal, horny, lanceolate, pennate or spathulate, without any air cells.

Loligidæ *Gray, Proc. Zool. Soc.* 1847, 285.
Loligidæ (pars) *D'Orb. Moll. Viv. et Fos.* i. 318.
Teuthidæ 11. (pars) *Owen, Trans. Zool. Soc.* ii. 1836.

A. *Head separate from the Body. Mantle free all round. Shell pennate.*

a. *Shell as long as Back. Fin posterior, dorsal, rhombic.*

1. Gonatus. Cups of sessile arms in four rows. Tentacular arms with many rows of small cups, and a single hooked cup at the base. Shell pennate, edges thin.

2. Loligo. Cups of sessile arms in two rows; lateral membranes with cups on angles. Shell pennate, edge thin.

3. Teuthis. Cups of sessile arms in two rows; lateral membranes without cups. Shell pennate, edges thin.

b. *Shell as long as Back. Fin occupying the Sides of the Body.*

4. Sepioteuthis. Shell pennate, broad; edge sometimes thickened.

c. *Shell elongate, broad. Animal* ——— ? *Fossil.*

5. TEUDOPSIS. Shell pennate, very broad below, narrow above.

6. LEPTOTEUTHIS. Shell lanceolate, very broad above, acuminate below.

7. BELOTEUTHIS. Shell oblong, dilated and winged behind, acuminated above.

8. BELEMNOSEPIA. Shell broad, central part dilated and produced in front, winged behind.

d. *Shell shorter than the Back. Fin short, on the middle of the Sides of the Back.*

9. ROSSIA.

B. *Head attached to the Back of the Mantle by a broad cervical Band. Fin short, in the middle of the Sides of the Back. Shell narrow, with a central and two marginal Ribs.*

10. SEPIOLA. Cups of sessile arms nearly sessile.

11. FIDENAS. Cups of sessile arms very longly peduncled.

A. *Head separate from the Body. Mantle free all round. Shell pennate.*

a. *Fin posterior, dorsal, rhombic. Shell as long as Back.*

1. GONATUS.

Body cylindrical, acute behind. Fins posterior, rhombic, connate behind, separate in front, elongated, linear. Ventral part of mantle with two interior marginal ridges, fitting into grooves on the base of the siphuncle, and a dorsal ridge and groove.—*Head* cylindrical; buccal membrane rounded, not lobed, without any cups. Eyes large, covered with the skin, with a small transparent spot; no eyelid.—Sessile *arms* curved, rounded externally; cups small, conical, contracted at the top, nearly uniform in size, in four series, all with small circular rings. Tentacular arms cylindrical, flattened internally and granular on the edges; club small, compressed, and finned at the tip, external; with ranges of small, nearly sessile, equal-sized cups (more numerous near the base), and with a large sessile cup armed with a hook in the middle of the lower part.—*Siphuncle* short, conical, without superior central band, and no interior valve.—*Shell* horny, thin, lanceolate, pennate, narrowed and extended in front, which is slightly margined on the sides.

Onycotheutis sp. *Moller, Moll. Græn*, 3. 1842.

Moller describes the tentacular arms with cups to the base; this is not the case, but each side of the flattened inner surface is

covered with minute scales, perhaps indicating cups, especially near the club; and the outer series of the cups on the shorter arms are like the other, with circular rings and no hooks.

1. GONATUS AMŒNA.

Body cylindrical, tapering and acute behind. Fins rhombic, not one third the length of the back.

Onycoteuthis ? amœna *Moller, Ind. Moll. Græn.* 1.

Hab. Greenland.

a, b, c. Greenland. In spirits. From Dr. Moller's Collection.

2. LOLIGO.

Body smooth, elongate, subcylindrical, pointed behind, truncated in front. Fin on the hinder part of the sides of the back, united behind, and forming together a rhomb. Mantle with two ridges on the ventral side, fitting into two grooves on the base of the siphuncle, and with a dorsal groove fitting in a longitudinal ridge on the nape.—*Head* subcylindrical, narrowed behind the eyes; buccal membrane produced into angles; angles furnished with two series of small ringed cups. Eyes large, with a small lacrymal before the globe of the eye. Aquiferous openings, one on each side, between the third and fourth sessile arms, and six on the lips.—Sessile *arms* subulate, triangular, or compressed; third pair large, and keeled externally; cups oblique, in two alternate series, on a small foot; rings generally toothed on the widest side; the third and fourth arms shortly webbed, rest free. Tentacular arms only partly retractile, cylindrical, attached by a band to the lower arms. Club lanceolate, finned externally, with four or more rows of cups.—*Siphuncle* moderate, not sunk into a hollow, fixed by two central superior bands, and with an internal valve.—*Shell* horny, internal, occupying the whole length of the body, lanceolate, like a pen, narrow above, and with a central, longitudinal, keeled ridge, forming gutter within. —*Eggs* in subcylindrical masses crowded together on sea weeds. *Rang, Mag. Zool.* 1837, t. 47.

Τευθος and Τευθις *Aristoteles.*

Sepia sp. *Linn. Syst. Nat.*

Loligo *Plinius, Belon, Rondeletius; Lamarck, Mém. Soc. H.N.* 1799. *Syst. An. s. Vert.* 60. 1801; *Leach, Jour. Phys.* 1817; *D'Orb. Moll. Viv. et Fos.* i. 333.

Calmars plumes ou Pterotœuthis, sect. E. *Blainville, Malac.* 1825.

Teudopsis sp. *Munster.*

* *Shell very broad, pennate. Side very convex; upper Part slender.*

1. LOLIGO BREVIS.

Body cylindrical, obtuse posteriorly. Pinnæ short, transversely oval. Shell dilated, oblong, pennate, central-keeled, narrow in front.

Loligo brevis *Blainv. Journ. de Phys.* 1823, *Dict. des Sc. Nat.* xxvii. 145.; *Féruss. D'Orb. Tab. des Céph.* 64. n. 10., *Céph. Acét.* t. 15—24. f. 14—19. rings; *D'Orb. Voy. Am. Mérid. Moll.* 62., *Paléont. univ.* t. 11. f. 1., *Paléont. étrang.* t. 9. f. 1., *Moll. Viv. et Fos.* i. 345. t. 19. f. 1. shell.

Loligo brevipinna *LeSueur, Journ. Acad. Nat. Hist. Philad.* iii. 282. 1824; *Féruss. D'Orb. Tab. des Céph.* 64. n. 10., *Céphal. Acét.* t. 13. f. 4—6. from LeSueur, *Bullet. Univ. Sc. Nat.* iii. 92.

Hab. Brazil. Rio Janeiro.

2. LOLIGO HARDWICKEI.

Body oblong, rounded behind. Fins nearly two thirds the length of the body, rounded on the sides. Second pair of sessile arms rather the largest. Tentacular arms with numerous small cups, with smaller ones in four rows at the tip. Shell lanceolate, pennate, very broad, with a narrow central ridge; the anterior extremity narrow, about one fourth the entire length.

Loligo Hardwickei *Gray, Brit. Mus.* 1836.

Hab. Indian Ocean.

a. India. In spirits. Presented by General Hardwicke.
b. Shell of *a.* dry.
c. India. In spirits. Small. Presented by General Hardwicke.

Like *L. brevis*, but fins longer; differs from *L. Duvaucelli*, in the fins being longer, and the shell broader, with a narrow stem.

** *Shell pennate, lanceolate. Sides convex; upper Part moderate.*

3. LOLIGO MAGNA.

Body oblong, subcylindrical, acuminated behind. Fins semirhomboidal, nearly two thirds the length of the sides. Sessile arms conico-subulate, with numerous rather large cups, and smaller ones at the end; cups oblique; rings with an eccentric opening, with eleven or thirteen elongate blunt teeth on the broad side, the rest smooth. Tentacular arms very long. Shell lanceolate, pennate, translucid; of the males elongate, acute; of the females broader and rather blunt.

Loligo magna *Rondeletius, Desc. Pisc. Marin.* lib. xvii. 506. cap. iv. 1554, *Hist. Nat. de Poiss.* 368. 1558; *Gesner, de Aquatilib.* lib. iv. 580.

Loligo major *Aldrovand. de Mollibus*, p. 67. 69, 70, 71. 1642; *Johnston, Hist. Nat.* lib. i. cap. iii. p. 10. t. 1. f. 4.; *Ruysch, Theat. univ. omn. Anim.* lib. iv. cap. iii. p. 8. t. 1. f. 4.

Sepia loligo *Linn. Mus. Adolph. Fred.* 94. 1754, *Syst. Nat.* ed. 12. 1095. n. 4. 1767, *Gmel. Syst. Nat.* edit. 13. 3150. n. 4.; *Scopoli, Hist. Nat.* 127.; *Pennant, Brit. Zool.* iv. 53. t. 27. n. 43.; *Müller, Zool. Dan. Prod.* 2815.; *Gronov. Zooph.* 244. n. 1027., *Act. Helvet.* v. 379. n. 489.; *Herbst. Einleit. zur Ken.* 79. n. 2. t. 390.: *Bosc, Hist. Nat. des Vers*, 46.

Loligo biscale *Borlase, Nat. Hist. Cornwall*, 266. t. 25. f. 32. 1758.

Calmar commun *Montfort, Buff. de Sonnin. Moll.* ii. 7. 1805.

Loligo vulgaris *Lamck. Mém. de la Soc. d'Hist. Nat. de Paris*, 1799, p. 11., *Syst. An. s. Vert.* 60. 1801, *Hist. An. s. Vert.* vii. 667.; *Férussac, Dict. Class.* iii. 67.; *Blainv. Dict. des Sc. Nat.* xxvii. 143., *Journ. de Phys.*; *Carus, Icon. Sep. Nov. Act. Phys. Med. Acad. Cæs. Nat. Cur.* xii. 319. t. 31.; *Féruss. D'Orb. Tab. des Céph.* 63. n. 8.; *Payraud. Cat. des Moll. de Corse*, 173. n. 352.; *Risso, Hist. Nat. Eur. Merid.* iv. 6. n. 7.; *Blainv. Faun. Franç.* t. 3. f. . p. 15.; *Philippi, Enum. Moll. Sic.* 241. n. 1.; *Bouchard, Cat. des Moll. de Boul.* 71. n. 123.; *D'Orb. Moll. des Canaries*, 23. n. 7., *Paléont. univ.* t. 10. f. 1—12. t. 11. f. 2—4., *Paléont. étrang.* t. 8. f. 1—12. t. 9. f. 2—4., *Moll. Viv. et Fos.* i. 336. t. 19. f. 2—4.; *D'Orb. et Féruss. Céph. Acét. Calmars*, t. 8. long arms, not good, 9, 10. 22. f. 1. 3. t. 23. f. 1—12.; *Potiez et Mich. Gall. des Moll. de Douai*, i. 8. n. 1.; *Cantraine, Malac. Nouv. Mém. Acad. de Brux.* xiii. 17. n. 3.; *Thompson's Report of the Brit. Assoc.* 1844, p. 248.

Loligo sagittata *Bowdich, Elem. of Conchol.* t. 1. f. 2. 1822.

Loligo pulchra *Blainv. Dict. des Sc. Nat.* xxvii. 144. 1823; *Férussac, D'Orb. Tab. des Céph.* 63.; *Blainv. Faun. Franç.* 17. a young female, *D'Orb.*

Loligo Rangii *Féruss. Céph. Acét. Calm.* t. 19. f. 4—6. 1833, on a bad drawing, *D'Orb.*

Loligo Berthelotii *Verany, Mém. Acad. Torin.* i. t. 6. (jun.) 1837.

Hab. Atlantic and Mediterranean.

a. Isle of Man. In spirits. Rev. J. Henslow. Mus. Leach.
b. ——— ? ——— ? Mus. Sloane.
c. ——— ? Half-grown. In spirits.
d. Brighton. Half-grown. In spirits. J. G. Children, Esq.
e. ——— ——— ? Eggs in spirits. Rev. G. E. Smith, Esq.
f. Base of head and jaws in spirits. Hastings.
g. Base of head and eyes in spirits. Torbay. Mus. Leach.

4. Loligo Pealii.

Body elongate, subconical, acuminated posteriorly. Fins rhomboidal, thick, occupying about three fifths of the length, together forming a rhomb much rounded on the sides, the front side rather shorter than the hinder. Sessile arms long; cups very oblique; rings on one side very high, with six or seven teeth, cut square at the end, other side flat, edged within. Tentacular arms long; cups unequal, very large, one rather oblique; their rings narrow, with alternate long and short very close acute teeth. Siphuncle long. Shell lanceolate, regular, narrow.

Loligo Pealii *Journ. Acad. Nat. Hist. Philad.* ii. 92. t. 8. f. 1, 2. 1821; *Blainv. Journ. de Phys.* 132., *Dict. d'Hist. Nat.* xxvii. 144.; *Féruss. Dict. Class.* iii. 67. n. 13.; *D'Orb. Tab. des Céph.* 63. n. 12.; *D'Orb. et Féruss. Céph. Acét. Calmars*, t. 11. t. 20. animal, f. 17—27. rings; *D'Orb. Moll. Viv. et Fos.* i. 341.

Hab. America, South Carolina and New York.

a. Boston, North America. In spirits. Presented by W. Winstone, Esq.

5. Loligo Emmakina.

Body oblong, rounded behind. Fins half as long as the body, subrhombic, slightly rounded at the sides. Lips with one or two very small cups at the tip. The second and third pairs of sessile arms larger, and with much larger cups. Tentacular arms with numerous small cups, and smaller ones at the top. Shell lanceolate, thin, with a black central ridge; the anterior part broad, one fourth the length.

Hab. Para.

a. Para. In spirits. Presented by R. Graham, Esq.
b. Shell of *a.*

6. Loligo australis.

Body oblong, subcylindrical. Labial membrane with small cups at the tips. Fins rhombic, half the length of the body. Tentacular arms with many moderate-sized cups disposed in four rows, and with numerous smaller cups forming four rows at the tip. Shell broad, lanceolate, blackish brown; upper end rather broad.

a. Australia, Newcastle. In spirits. Presented by Rev. C. N. Wilton.
b. Shell of *a.* broken.

7. LOLIGO BRASILIENSIS.

Body elongate, subcylindrical, acuminate behind. Fins short, half the length of the body, together rhomboidal with rounded angles, broader than long. Sessile arms triangular; ring oval, opening eccentric, higher side with six or eight broad teeth, cut square. Tentacular arms very long: cup unequal: ring of larger cups nearly regular, with acute equal-sized equal-distanced teeth; of smaller oblique, with very long distant teeth on the higher, and short close ones on the narrow side. Shell narrow, lanceolate, depressed, broad above, with an additional groove on each side in front.

Loligo brasiliensis *Blainv. Journ. de Phys.* 1823, *Dict. des Sc. Nat.* xxvii. 144.; *Féruss. D'Orb. Tab. des Céph.* 64., *Céph. Acét.* t. 12.; *D'Orb. Voy. dans l'Amér. Mérid. Moll.* 63., *Moll. des Antilles*, i. 38. n. 10., *Moll. Viv. et Fos.* i. 344.

Loligo Poeyianus *Féruss. Céphal. Acét. Calmars*, t. 19. f. 1, 2, 3. 1833.

Hab. Brazil, Island of Cuba.

8. LOLIGO GAHI.

Body elongate, subcylindrical, white, spotted with red. Fins terminal, short, one third the length of the body, rhomboidal, outer angle rounded, broader than long. Sessile arms very long; ring of cups very oblique, armed on the higher side with six broad blunt teeth. Tentacular arms with unequal cups: rings of larger cups oblique, armed with equal close blunt teeth; of the smaller ones oblique, with acute teeth, longest on the higher side. Shell elongate, dilated behind, produced, narrow in front.

Loligo Gahi *D'Orb. & Féruss. Céph. Acét. Calmars*, t. 21. f. 3, 4.; *D'Orb. Voy. Am. Mérid.* v., *Moll.* 60. t. 3. f. 1, 2. 1835, *Paléont. univ.* t. 10. f. 12, 13., *Paléont. étrang.* t. 8. f. 12, 13., *Moll. Viv. et Fos.* i. 348. t. 18. f. 13, 14. ring of cups.

Hab. South America, Chili.

9. LOLIGO NEGLECTA.

Body oblong, subcylindrical. Fin two thirds the length of the body, rhombic, rounded on the sides. Tentacular arms with eight or nine very large cups in two rows, and small ones at the ends. Shell lanceolate.

Loligo vulgaris *D'Orb. Moll. Viv. et Fos.* i. t. 18. f. 1. 12.

Hab. Atlantic.

a. Malta. In spirits.

b. Lisbon. In spirits. Presented by G. Hough, Esq.

c. South of Europe. In spirits, in a bad state. Presented by P. B. Webb.

d. Dalmatia. In spirits. Mr. Heckel's Collection.

10. LOLIGO REYNAUDII.

Body elongate, larger in the middle, acuminate behind. Fins occupying more than two thirds the length of the body, elongate, rhomboidal. Sessile arms well rounded at the angles, short, unequal; second, third, and fourth pairs externally carinated; ring of cups with acute teeth on the higher side, diminishing in size to the other side. Tentacular arms large, cylindrical: cups very unequal, ten or twelve central very large; their rings smooth, of smaller lateral cups oblique, with acute teeth, longest on the higher side. Shell narrow, lanceolate; central groove rather produced above.

Loligo Reynaudii *Féruss. & D'Orb. Céph. Acét. Calmars*, t. 24. f. 1—8. 1839, *Paléont. univ.* t. 11. f. 3., *Paléont. étrang.* t. 9. f. 3., *Moll. Viv. et Fos.* i. 346. t. 19. f. 1—5.

Hab. Cape of Good Hope.

a. Cape of Good Hope. In spirits. Presented by G. Borodaile, Esq.

b. The shell of *a.* in spirits.

11. LOLIGO TRICARINATA.

Animal ————. Shell lanceolate, transparent, whitish, central groove deep; the blade with a slight raised ridge from the apex to the front part of the outer edge, near the commencement of the shoulder, producing three distinct keels on the convex side of the tip; the upper part of stem one fifth of the length. Length sixteen inches.

Hab. Isle of France.

a, b. Shells. Isle of France. Presented by Lady Francis Cole.

Differs from all the other shells of the genus by its large size, and the oblique groove from the tip to the upper margin. The shell of *L. Reynaudi* is only twelve inches long.

**** Shell lanceolate, sides straight, converging; upper part broad.*

12. LOLIGO DUVAUCELII.

Body oblong, elongate. Fins irregular, rhombic, half as long as the body. Buccal membrane seven-lobed. Sessile arms, third pair largest, compressed, finned externally; cups of the lowest or

fourth pair of arms unequal, rings with eight or nine blunt truncated teeth. Tentacular arms much enlarged at the end, with rather unequal cups; the rings of the largest very narrow, with distant acute teeth, largest on the highest side; lateral cups oblique; rings with very unequal teeth, shortest on the lowest side. Shell pennate, enlarged, provided with three grooves above, oblong, lanceolate, dilated anteriorly and posteriorly.

Loligo Duvaucelii *D'Orb. & Féruss. Céph. Acét. Calmars*, t. 14. t. 20. f. 6—16. 1826 and 1839; *D'Orb. Moll. Viv. et Fos.* i. 350.

Hab. India.

May be the young of *L. chinensis*, but the rings of the cups are very different from Férussac's figures.

13. Loligo chinensis.

Body oblong, subcylindrical, acuminated behind. Fins rhombic. Labial membrane with a few small cups. Sessile arms, third pair largest, compressed, finned; rings of the cups of the ventral or lower pair of arms with many close acute teeth. Tentacular arms with numerous rather large cups, and some very small ones at the tip; rings of cups with distant teeth. Shell translucid, lanceolate, rather dilated behind the central part, broad, tapering; upper part (called the *stem*) short broad.

Hab. China.

a, *b*. Canton market. Salted, now in spirits. Presented by T. Lay, Esq.
c, *d*. The shell of *a*, *b*.

14. Loligo Plei.

Body very elongate, cylindrical, acuminate posteriorly. Fins rhomboidal, about two fifths the length of the body, outer angle rounded. Sessile arms conico-subulate, very short, unequal; order of length, 3, 4. 2, 1; cups oblique; rings even, toothless. Tentacular arms, club small; cups unequal; rings of the largest smooth, toothless, of the smaller ones with acute points; of the small cups on the sides very oblique, with long teeth on the higher side. Shell elongate, very narrow, lanceolate, with three longitudinal grooves.

Loligo Plei *Blainv. Journ. de Phys.* 142., *Dict. Sc. Nat.* xxvii. 145. 1823; *Féruss. D'Orb. Tab. des Céph.* 64. n. 14.; *D'Orb. Moll. des Antilles*, i. 42. n. 11., *Paléont. univ.* t. 11. f. 6., *Paléont. étrang.* t. 9. f. 6., *Moll. Viv. et Fos.* i. 343. t. 19. f. 6.; *D'Orb. et Féruss. Céph. Acét. Calmars*, t. 16. t, 24. f. 9—13.

Hab. West Indies, Martinique, and Cuba.

15. LOLIGO ALESSANDRINII.

Body oblong, subcylindrical, rounded behind. Fins about two fifths the length of the body, posterior, rounded. Cups of tentacular arms, unequal, large.

Loligo Alessandrini *Verany, Ceph. ex Sicilia*, t. 2. f. 2.

Hab. Sicily.

4* *Doubtful recent Species.*

16. LOLIGO MINIMA.

Body smooth, oblong, conical. Fins very small, at the end of body, semicircular, far apart. Sessile arms short, rather unequal; cups in two lines. Tentacular arms long, cylindrical, scarcely enlarged at the end, with two rows of small, alternate, peduncled cups. *Férussac.*

Loligo minima *D'Orb. Moll. Viv. et Fos.* i. 351.
Cranchia minima *Féruss. Cranchies*, t. 1. f. 4, 5. 1830.

Hab. Coast of Africa.

17. LOLIGO CARUNCULATA.

Body oblong, roundish. Fins rhombic. Tentacular arms with cylindrical or triangular caruncles on the inner side, and a few cups.

Sepia carunculata *Schneider, Beobacht. und Endeck. aus der Nat.* v. 42.; *Isert, Reise nach Guinea*, 7. 1788.
Loligo carunculata *Féruss. MS.*; *D'Orb. Moll. Viv. et Fos.* i. 352.

Hab. Gulf of Guinea.

18. LOLIGO LANCEOLATA.

Loligo lanceolata *Rafin. Précis des Découv. Somiol.* 29. 14.; *D'Orb. Moll. Viv. et Fos.* i. 352.

Hab. Mediterranean. Not described.

19. LOLIGO OSOGADIUM.

Loligo osogadium *Rafin. Précis des Découv. Somiol.* 29. 1814; *D'Orb. Moll. Viv. et Fos.* i. 352.

Hab. Mediterranean. Not described.

5* *Fossil Species. Upper Lias.*

20. LOLIGO PYRIFORMIS.

Shell oblong, smooth, attenuated in front, dilated behind.

Teudopsis pyriformis *Munster, Beitr. Petref.* vi. 58. t. 6. f. 3. 1843.

Loligo pyriformis *D'Orb. Paléont. univ.* t. 12.; *Moll. Viv. et Fos.* i. 336.

Fos. Upper Lias, Ohmden, Wurtemburg.

21. LOLIGO PYRIFORMIS.

Shell ovate, oblong, smooth, dilated behind, attenuated in front.

Loligo pyriformis *D'Orb. Paléont. univer.* t. 12. 1845, *Paléont. étrang.* t. 10., *Moll. Viv. et Fos.* i. 336.

Teudopsis pyriformis *Munster, Beitr. Petref.* vi. 58. t. 6. f. 3. 1843.

Fos. Upper Lias.

3. TEUTHIS.

Body elongate, acute behind, becoming produced and elongated in adult age, especially in the males. Fin rather behind the middle of the sides of the back, forming a heart-shaped expansion together.—*Head* subcylindrical. Labial membrane simple, not produced into angular lobes, and destitute of any cups. Shell lanceolate, narrow; rest like *Loligo*.

Teuthis *Aristotcles, de Anim.* iv. 1.; *Schneider, Samml. Verm.* 112. 1784.

Loligo sp. *Belon, de Aquat.* 339.; *Férussac, Lamck., Leach, &c.*

Sepia sp. *Linn.*

Loligo β. *D'Orb. Moll. Viv. et Fos.* i. 337.

1. TEUTHIS PARVA.

Body subcylindrical, elongate, attenuated behind, and in the adult males produced beyond the fins. Fins separate, far apart in front, rhomboidal, subcordiform. Sessile arms with the oblique rings armed with blunt close teeth on the higher side. Tentacular arms long, clubbed; rings with very close blunt teeth. Shell lanceolate, broad, narrow in front.

Loligo parva *Rondelet. de Piscib.* lib. xvii. cap. v. 508. 1554; *Gesner, de Aquat.* lib. iv. 581.; *Bossuet de Nat. Aquat.* 200.; *Leach, Nat. Miscell.* iii. 138.; *D'Orb. Moll. Viv. et Fos.* i. 339.

Loligo minor, Rondeletii *Aldrovand. de Moll.* 72. 67. 1642; *Johnston, Hist. Nat. Exang.* lib. i. de Moll. cap. iii. p. 8. t. 1. f. 5.; *Ruysch, Theatr. Exang.* 8. t. 1. f. 5.

Sepia media *Linn. Syst. Nat.* ed. 12. 1095. n. 3. 1767; *Scopoli, Hist. Nat.* 27.; *Pennant, Brit. Zool.* iv. 54. t. 29. f. 45.; *Gmel.*

Syst. Nat. edit. 13. 3150. n. 3.; *Turton, Brit. Zool.* 119.; *Brug. Encyc. Méth.* t. 76. f. 9.

Calmar dard *Montfort, Buff. de Sonnin, Moll.* ii. 74. t. 16, 17. 1805.

Calmar contourné *Montfort, Buff. de Sonnin. Moll.* 82. t. 18. 1805.

Loligo subulata *Lamarck, Mém. Soc. Hist. Nat. Par.* i. 15. n. 3. 1799, *Hist. An. s. Vert.* vii. 664. n. 3.; *Bosc, Buff. de Deterv. Vers*, i. 46.; *Blainv. Journ. de Phys.* 131., *Dict. des Sc. Nat.* xxvii. 143.; *Férussac, Dict. Class.* iii. 67. n. 5.; *D'Orb. Tab. des Céph.* 63. n. 9.; *Payraudeau, Cat. Moll. de Corse*, 172. n. 350.; *Blainv. Faunc. Franç.* 16.; *Potiez & Mich. Gall. Moll. de Douai*, i. 8. n. 2.; *Cantraine, Malac. Nouv. Mém. Acad. de Brux.* xiii. 17. n. 2.; *D'Orb. Céph. Acét. Calmars*, t. 17. t. 23. f. 19. 13—21.; *Thompson's Report of the Brit. Assoc.* 248.

Loligo spiralis *Féruss. Dict. Class.* n. 6. 1823; *D'Orb. Tab. des Céph.* 63. n. 10.

Loligo marmoræ *Verany, Mem. Acad. Sc. Torin.* i. t. 5. 1837, female.

Loligo Lamarmoræ *Verany, Cat. Invert. Genova*, 17.

Hab. Atlantic and Mediterranean, Coasts of France and England.

a. Brighton. Male; tail very long. In spirits. Presented by J. Rucker, Esq. Mus. Leach.

b. Shell of *a.* dry. ————. ————————.

c. Hastings. Male, larger; tail longer. In spirits. Presented by J. G. Children, Esq.

d. Devon. Female, smaller; tail shorter. In spirits. Presented by W. E. Leach, M. D.

e. Coast of Holland. Female; tail shorter. In spirits. Presented by E. Engle, Esq.

f. Shell of *e.* dry.

g. Shell of *d.*

h. Shell. Coast of France. Presented by W. E. Leach, M. D. Young, the end of tail not produced. Fins about two fifths the length of the body.

Loligo vulgaris jun. *Féruss. Céph. Acet.* t. 22. f. 23. ?

i. Weymouth. Young. In spirits. Presented by Rev. Dr. J. Goodall.

j. Plymouth. Young. In spirits. Presented by W. E. Leach, M. D.

2. Teuthis sumatrensis.

Body short, cylindrical, attenuated behind. Fins regularly rhomboidal, truncated in front, rounded on the sides, nearly half the length of the body. Sessile arms moderate; rings with six or

eight very blunt teeth on the higher side; lower side smooth; third pair largest. Tentacular arms long, slender; club lanceolate; cups unequal; ring of the lateral cups armed with sharp teeth on the higher side. Shell oblong, spoon-shaped; upper part rather narrow and produced.

Loligo sumatrensis *D'Orb. & Féruss. Céph. Acét. Calmars*, t. 13. f. 1—3. 1839; *D'Orb. Moll. Viv. et Fos.* i. 349.

Hab. Sumatra.

b. *Shell as long as Back. Fin occupying the Sides of the Body.*

4. SEPIOTEUTHIS.

Body oblong, rather depressed, subcylindrical. Fins narrow, extending the whole length of the sides of the back. Suspending buttons on the ventral surface, marginal, cartilaginous, linear, enlarged below; cervical ridge linear.—*Head* large, buccal membrane seven-lobed; buccal aquiferous openings six; external ear with a transverse crest, enlarged and curved up in front. — Sessile *arms* conical, subulate, unequal, finned externally; cups in two rows. Tentacular arms long, cylindrical; club enlarged and finned; cups in four alternated rows, with a thin membrane. — *Siphuncle* with two central superior bands. — *Shell* internal; horny, the length of the back, pennate, lanceolate, narrow in front, and with a central keel.

Sepia sp. *Lamck.* 1812.

Calmars Seiches (Loligo Sepioïdea) *Blainv. Jour. Phys.* 1823, *Malac.* 1825.

Chondrosepia *Leuckart*, 1828.

Sepioteuthis *Férussac, Tab. Céph.* 1825; *D'Orbigny, Moll. Viv. et Fos.* i. 319. t. 17.; *Desh.* in *Lamck. Hist.* xi. 242.

Les Sepioteuthes *Blainv. Malac.*

Synopsis of Sections.

* Buccal membrane provided with cups.

** Buccal membrane without any cups.

* *Buccal Membrane provided with Cups.*

† *Shell lanceolate, thickened on the Sides, obliquely up to the Shoulder.*

1. SEPIOTEUTHIS LUNULATA.

Body oval, oblong. Fins very broad, fleshy, most dilated behind the middle of the body.. Sessile arms elongate, slender, unequal; order of length, 3, 2, 4. 1; cups depressed, oblique; rings with

strong, curved, distant teeth, longest on the highest side. Tentacular arms much clubbed, blunt; cups rather oblique, in four lines; rings of the larger central ones narrow, with very distant teeth. Shell lanceolate, thickened edge extending up to the shoulder, upper part short.

Sepioteuthis lunulata *Quoy & Gaim. Voy. Astrol. Zool. Moll.* ii. p. 74. t. 3. f. 8—13. ♀? 1832; *D'Orb. et Féruss. Céphal. Acét. Sepioteuthis*, t. 3. f. 1. t. 6. f. 1—8.; *D'Orb. Moll. Viv. et Fos.* i. 323. t. 17. f. 5—8.

Sepioteuthis guinensis (Sepioteuthe de Dorei) *Quoy & Gaim. Voy. Astrol. Zool. Moll.* ii. 72. t. 3. f. 1—7. 1833.

Sepioteuthis dorensis *D'Orb. et Féruss. Céph. Acét. Sepioteuthis*, t. 3. f. 3. ♂? 1833.

Hab. New Guinea, Vanikoro.

2. SEPIOTEUTHIS AUSTRALIS.

Body oblong-elongate, cylindrical, truncated in front, acuminate and blunt behind. Fins very broad, very fleshy, subrhomboidal, broadest in the middle of the body. Sessile arms elongate, unequal; order of length, 3, 4, 2, 1. Tentacular arms very strong, compressed; club large; cups very large; rings of larger cups with very blunt distant teeth. Shell thin, flexible, lanceolate, widest at one third its length; central rib prominent, expansion commencing near its upper end.

Sepioteuthis australis *Quoy & Gaim. Voy. Astrol. Zool.* ii. 77. t. 4. f. 1. 1833, *Règne Animal du Cuv.* t. 3.; *D'Orb. et Féruss. Céphal. Acét. Sepioteuthis.* t. 5. f. 5. t. 6. f. 15—21.; *D'Orb. Moll. Viv. et Fos.* i. 324. t. 17. f. 15.

Hab. New Holland.

Var. 1. Cups on labial membrane, three in one line.

a. Port-Jackson, Australia. Half-grown. In spirits. Presented by J. B. Jukes, Esq. n. 81.

b. The shell of *a.*

Var. 2. Cups on labial membrane, five in two lines.

c. Darnley Island, Australasia. Adult. In spirits. Presented by J. B. Jukes, Esq. n. 241.

3. SEPIOTEUTHIS MAURITIANA.

Body spotted with violet, cylindrical, acuminated behind. Fins narrow, widest at two thirds the length of the body. Sessile arms unequal; order of length 3, 4, 2, 1; cups oblique; rings with a number of acute, hooked, curved teeth. Tentacular arms slender; cups rather oblique; rings of the middle cups with acute, distant, hooked teeth, largest on the highest side.

Labial membrane with four or five cups at the angles (see *Férussac*, l. c. t. 5. f. 4. t. 7. f. 8.). Shell lanceolate, narrow, widest at one third the length, central ridge very strong. Sides thickened, and diverging to the upper extremity of the expansion.

Sepioteuthis mauritiana *Quoy & Gaim. Voy. Ast. Moll.* ii. 76. t. 4. f. 2—6. 1833; *D'Orb. et Féruss. Céphal. Acét. Sepioteuthis*, t. 5. f. 1—4. t. 7. f. 1—5.; *D'Orb. Moll. Viv. et Fos.* i. 328.

Hab. Mauritius.

4. SEPIOTEUTHIS MADAGASCARIENSIS.

Body oblong, rounded behind. Fins broad, rounded. Cups of tentacular arms unequal, four-rowed. Labial membrane with a single cup at the tip of each angle. Shell lanceolate, rather broad, thickened on the side, upper part rather broad, blackish.

Sepioteuthis madagascariensis *Gray MS. B. M.* 1836.

Hab. Madagascar.

a. Madagascar. In spirits. Presented by J. E. Gray, Esq.
b. Shell of *a*. In spirits.

†† *Shell lanceolate, not thickened on the Sides.*

5. SEPIOTEUTHIS LESSONIANA.

Body elongate, spotted with violet. Fins dilated posteriorly. Head broad; ear crests thick, broad. Sessile arms elongate, unequal; order of length, 3, 4, 2, 1; cups oblique; rings with distant acute teeth. Tentacular arms bluntly clubbed; cups large, very oblique; rings armed with acute, distant, curved teeth. Shell lanceolate, broadest in the middle; outer edge not thickened; central rib broad, extended in front, one fifth the length.

Sepioteuthis Lessoniana *Féruss. D'Orb. Tab. des Céph.* 65. 1825; *Lesson, Voy. de Coquille, Moll.* 241. t. 11.; *D'Orb. et Féruss. Céphal. Acét. Sepioteuthis*, t. 1. t. 6. f. 2—14.; *D'Orb. Moll. Viv. et Fos.* i. 326.

Hab. New Guinea.

a. Bay of Islands, New Zealand. Adult. (Rings of the cups black, nearly edentulous.) Antarctic Expedition.
b. Shell of *a*. broken. In spirits.
c, *d*. Bay of Islands, New Zealand. Young. (Rings of the cups brown, with numerous acute teeth.) Antarctic Expedition.

e. Shell of *c*. In spirits.
f. ? Shell dry. (Probably of this species.)

D'Orbigny, in his description, says the shell is without any lateral ridges or thickening, but his specific character is (*lateribus incrassatis*). Both our specimens have three or four small cups, forming a single line on the angles of the buccal membrane; and they show that the rings, on which M. D'Orbigny appears to place much reliance, change their character with the age of the specimens.

** *Buccal Membrane without any Cups.*

† *Shell very thin, not thickened on the Edges.*

6. SEPIOTEUTHIS SEPIOÏDEA.

Body ovate, oblong, spotted with violet, acuminated behind. Fins commencing some distance behind, outline subrhomboidal. Sessile arms subulate, slender, unequal; order of length 3, 1, 4, 2; dorsal pair compressed, other depressed; rings broad, with long acute teeth, smaller on their lower side. Tentacular arms slightly clubbed; cups in four lines, of the two central lines largest. Shell, very thin, transparent, very broad, lanceolate, edge not thickened; central ridge broad above, very narrow below.

Sepia officinalis var. b. *Lamck, Mém. de la Soc. d'Hist. Nat.* 1799, p. 7., *Hist. An. s. Vert.* xii. 668.
Seiche truitée *Montfort, Buff. de Sonnin. Moll.* i. 265. t. 6. 1805.
Loligo sepioïdea *Blainv. Journ. de Phys.* 1823, p. 133., *Dict. Sc. Nat.* xxvii. 146.
Sepia affinis *Féruss. D'Orb. Tab. Méth. des Céphal.* 66. n. 3. 1825.
Sepia biserialis *Blainv. Dict. Sc. Nat.* xlviii. 284. 1827.
Sepioteuthis biangulata *Rang, Mag. de Zool.* 73. t. 98. 1837.
Sepioteuthis sepioïdea *D'Orb. Moll. des Antilles*, i. 34. n. 9. 1838, *Moll. Viv. et Fos.* i. 320.; *D'Orb. et Féruss. Céphal. Acét. Sepioteuthis*, t. 7. f. 6—11. rings.

Hab. West Indies.

a. Honduras. In spirits.
b. Jamaica ?. In spirits. Mus. Sloane.
c. The shell of *b*., dry. Slightly thickened on the edge.

†† *Shell with the Margin thickened.*

7. SEPIOTEUTHIS SLOANII.

Sessile arms with only two rows of rings at the base. Fins widest in the middle of the body. Shell broad, lanceolate, with a very

broad thickened side; margin thicker on the inner side; central keel very broad, rounded above, thicker in the centre, without any grooves on the sides; gradually narrower in front.

Loligo Sloanii *Leach, MS. Brit. Mus.* 1817.

Hab. West Indies.

a. Honduras. In spirits.
b. The shell of *a.*
c. ———— ? In spirits. Mus. Sloane.
d. Shell of *c.*, dry. Taken out by Dr. Leach.

8. Sepioteuthis Blainvilliana.

Body cylindrical, rather attenuated, but rounded behind. Fins fleshy, outline broader in the middle of the body. Sessile arms slender, long; rings oblique, thick, with long, close, acute teeth. Tentacular arms, cup moderately large; rings like those of the sessile arms. Under side of the buccal membrane tuberculously thickened. Shell lanceolate, very broad, thin, lateral expansion broadest in the middle of the length, strongly thickened on the sides of the extremity.

Sepioteuthis Blainvilliana *Féruss. & D'Orb. Sepioteuthis*, t. 2. 1839; *D'Orb. Moll. Viv. et Fos.* i. 327. t. 17. f. 1—4.

Hab. Java.

*** *Buccal Membrane unknown or undescribed.*

† *Fins most dilated on the Middle of the Body.*

9. Sepioteuthis Hemprichii.

Body compressed, attenuated posteriorly, rounded. Fins subequal, elliptical, enveloping the whole sides. Shell very soft.

Sepioteuthis Hemprichii *Ehrenberg, Symbolæ Physicæ, Céph.* n. 1. 1831; *D'Orb. Moll. Viv. et Fos.* i. 322.

Hab. Red Sea.

10. Sepioteuthis bilineata.

Body elongate, rhomboidal, surrounded with a blue mark. Fins dilated in the middle.

Sepia bilineata *Quoy & Gaim. Voy. Astrol. Zool.* ii. 66. t. 2. f. 1. 1833.

Sepioteuthis bilineata *D'Orb. & Féruss. Céphal, Acét. Sepioteuthis*, t. 4. f. 2. 1839; *D'Orb. Moll. Viv. et Fos.* i. 325.

Hab. New Holland.

11. SEPIOTEUTHIS MAJOR.

Body subcylindrical, attenuated posteriorly; lateral piunæ produced to the whole length of the body, extended in the middle.

Sepioteuthis major *Gray, Spic. Zool.* 3. t. 4. f. 1. (Mus. Col. Surg.); *D'Orb. et Féruss. Céphal. Acét. Sepioteuthis*, t. 7. f. 12. 1828; *D'Orb. Moll. Viv. et Fos.* i. 330.

Hab. Cape of Good Hope. Mus. Col. Surgeons. The giant of the genus.

†† *Fins most dilated behind the Middle of the Body.*—Chondrosepia.

12. SEPIOTEUTHIS LOLIGINIFORMIS.

Shining fuscous colour above, flesh-coloured beneath, with small reddish points scattered all over; aliform membrane broader towards the posterior part, of a violet colour underneath.

Sepioteuthis loliginiformis *D'Orb. & Féruss. Céph. Acét. Sepioteuthis*, t. 4. f. 1. 1839; *D'Orb. Moll. Viv. et Fos.* i. 322.

Chondrosepia loliginiformis *Leuckart; Rüppell, Atlas zu der Reise*, t. 21. t. 6. f. 1. 1828.

Hab. Red Sea.

13. SEPIOTEUTHIS ————?

Sepioteuthis sinensis *D'Orb. Moll. Viv. et Fos.* i. 329. 1845, from *Encyclop. Japonaise*, art. *Jeou-iu* (Poisson mou).

c. *Shell elongate, pennate, broad. Animal unknown. Fossil.*

5. TEUDOPSIS.

Animal unknown.—*Shell* internal, horny, spathula-formed, very narrow, much prolonged in front and dilated behind, with a narrow medial rib; the lateral expansion broad, convex above, concave below, representing a kind of spoon at the hinder extremity.—*Fossil.* Upper Lias.

Teudopsis (les Teudopsides) *Deslongchamps, Mém. Soc. Linn. Norm.* 1835, v. 74. t. 3. f. 1, 2, 3.; *D'Orb. Moll. Viv. et Fos.* i. 359., *Paléont. Franç.*; *Desh.* in *Lamck. Hist.* xi. 241.

Beloteuthis sp. *Munster, Petref.* vi. t. 6. f. 1.; *Bronn, Gesch. der Naturg.* iii. 541.

Teuthopsis *Bronn, Gesch. der Nat.* iii. 541. misprint?

1. Teudopsis Bunellii.

Shell elliptical, smooth, attenuated in front, rather blunt behind, convex above, and concave below.

Teudopsis Bunellii *Deslongch. Mém. Soc. Linn. Norm.* v. 74. t. 3. f. 123. 1835; *D'Orb. Paléont. Franç. Ter. Jur.* i. 38. t. 1., *Paléont. univ.* t. 13., *Moll. Viv. et Fos.* i. 361. t. 20.
Teuthopsis Bunellii *Bronn*, l. c. 541.
T. Caumontii *Deslongch.* l. c. v. 76. t. 3. f. 45.

Fos. Upper Lias, Calvados. *Deslongch.*

2. Teudopsis ampullaris.

Shell elongate, lanceolate, smooth; sides sinuated; before elongate, slender, produced; behind, dilated, blunt.

Teudopsis ampullaris *D'Orb. Pal. univ.* t. 14. f. 1, 2. 1845, *Pal. étrang.* t. 11. f. 1, 2., *Moll. Viv. et Fos.* i. 260.
Beloteuthis ampullaris *Munster, Beitr. Petr.* vi. t. 6. f. 1.? 1843; *Bronn, Gesch.* 541.
Sepioteuthis gracilis *Munster, Beitr. Petr.* vi. t. 14. f. 5.?

Fos. Upper Lias.

3. Teudopsis Bollensis.

Shell lanceolate, elongate, oblique, and broad on the sides, very narrow and prolonged in front, enlarged behind; sides deeply sinuated; central rib very distinct.

Teudopsis Bollensis *Voltz, Taschenb.* 629. 1836; *D'Orb. Paléont. univer.* t. 14. f. 3., *Paléont. étrang.* t. 11., *Moll. Viv. et Fos.* i. 361. t.
Loligo Bollensis *Schubler, Zeiten. Wurt.* 49. t. 37. f. 1. 1830, not t. 25. f. 6, 7.
L. Schubleri *Queenstedt, Wurt.* 254. 1843.
Beloteuthis Bollensis *Bronn*, l. c. 541.

Fos. Upper Lias, Wurtemburg.

6. LEPTOTEUTHIS.

Animal unknown.—*Shell* horny, internal, lanceolate, very broad and rounded in front; the central rib is only slightly convex, and very broad.—*Fossil.* Oxford Clay.

Leptoteuthis *Meyer, Mus. Senskenb.* i. 202. 1824; *Bronn, Taschenb.* 1836, 56.; *D'Orb. Paléont. univ.* t. 15., *Paléont. étrang.* t. 12. *Moll. Viv. et Fos.* i. 363. t. 21.

ROYAL ASIATIC

1. LEPTOTEUTHIS GIGAS.

Shell lanceolate, smooth, blunt in front, pointed behind.

Leptoteuthis gigas *Meyer, Mus. Lenskenb.* i. 202.; *Bronn, Taschenb.* 1836, 56.; *D'Orb. Moll. Viv. et Fos.* i. 363. t. 21.

Fos. Oxford clay, Solenhoffen.

7. BELOTEUTHIS.

Animal unknown.—*Shell* internal, horny, lanceolate, flat, acuminated in front, enlarged and winged behind, with a central convex, and two diverging lateral concave ridges in the concave beneath.—*Fossil.* Upper Lias.

Beloteuthis (pars) *Munster, Beitr. Petref.* vi. t. 5. f. 1. 1843; *D'Orb. Moll. Viv. et Fos.* i. 364. 1845, *Paléont. univ.* t. 16. 1845.
Sepiolites sp. *Munster*, 1843.
Teuthopsis sp. ? *Bronn, Ges. der Nat.* iii. 541.

1. BELOTEUTHIS SUBCOSTATA.

Shell compressed, lanceolate, attenuated in front, substriated above, and rather costated beneath.

Beloteuthis subcostata *Munster, Beitr. Petref.* 61. t. 5. f. 2. t. 6. f. 2.; *D'Orb. Moll. Viv. et Fos.* i. 363., *Paléont. univ.* t. 16., *Paléont. étrang.* t. 13.
B. substriata *Munster*, l. c. 62. t. 5. f. 3. t. 6. f. 5.
B. acuta *Munster*, l. c. 63. t. 6. f. 4.
B. venusta *Munster*, l. c. 64. t. 14. f. 2.
B. ampullaris (pars) *Munster*, l. c. t. 5. f. 1. not t. 6. f. 1.
Sepialites substriatus *Munster*, l. c. 76. t. 6. f. 6. ?

Fos. Upper Lias, Wurtemburg.

8. BELEMNOSEPIA.

Animal unknown.—*Shell* internal, horny, thin, broad; central part gradually increasing in breadth to the more or less produced broad front part, and with a rounded expansion on each side behind; the lines of growth of the central part transverse, and of the lateral wing arched and concentric; the hinder part convex above and concave beneath.—*Fossil.* Upper Lias and Oxford Clay.

Belemnosepia *Agassiz, Lehrb.* 1835, 627. 1836, 36. in *Buckland, Geol.* i. 374. note, 1836, ed. 2. 414. 1839; *Desh.* in *Lamck. Hist.*

xi. 245.; *D'Orb. Paléont. Franç. Ter. Jur.* 1842, *Moll. Viv. et Fos.* i. 433.; *Mantell, Medals of Creation*, ii. 468. fig.
Belopeltis *Voltz, Bull. Soc. Géol.* ii. 40. 1840, *Mém. Soc. Strasb.* iii. 1843.
Loligosepia *Queenstedt, Flolzeberg Wurtemb.* 252. 1843, not Blainv.
Geoteuthis *Munster, Beitr.* vi. 68. 1843; *D'Orb. Moll. Viv. et Fos.* i. 161.
Paleosepia *Théod.* 1844.
Onychoteuthis sp. *Munster, Lehrb.* 1830.
Sea Pens, or Loligo sp. *Buckland, Geol.* i. 374.
Celæno ? sp. *Owen, Trans. Phil. Soc.* 1844.

1. BELEMNOSEPIA LATA.

Shell dilated, compressed, broad, and truncated in front, with broad entire wings behind.

Geoteuthis lata *Munster, Beitr.* vi. t. 7. f. 1. 1843.
Belemnopeltes emarginata *Voltz, MS.*
Belemnosepia lata *D'Orb. Paléont. univ.* t. 25. f. 1. t. 26. f. 1., *Moll. Viv. et Fos.* i. 436. t. 31. f. 1.

Fos. Upper Lias, Wurtemburg.

2. BELEMNOSEPIA FLEXUOSA.

Shell oblong, lanceolate, produced, truncated, and narrow lanceolate behind; sides with elongate narrow wings.

Geoteuthis flexuosa *Munster, Beitr. zur Petref.* vi. t. 9. f. 2. 1843.
Belemnosepia flexuosa *D'Orb. Paléont. univ.* t. 25. f. 2. t. 26. f. 2. 1846, *Moll. Viv. et Fos.* i. 437. t. 31. f. 2.

Fos. Upper Lias, Wurtemburg.

3. BELEMNOSEPIA AGASSIZII.

Shell elongate, conical, dilated before, attenuated behind. Wings on sides elongate, broad.

Teudopsis Agassizii *Deslongch. Mém. Soc. Lin. Norm.* v. 72. t. 2. f. 15. 1835.
Belemnosepia Agassizii *D'Orb. Paléont. univ.* t. 25. f. 3. 1846, *Moll. Viv. et Fos.* i. 437. t. 31. f. 3.

Fos. Lias, Calvados.

4. BELEMNOSEPIA ORBIGNYANA.

Shell dilated, compressed, broad in front. Wing of hinder part broad, sinuous.

Geoteuthis Orbignyana *Munster*, *Beitr. Petref.* vi. t. 7. f. 2. 1843.
Belemnosepia Orbignyana *Orb. Paléont. univ.* t. 26. f. 3. 1846, *Moll. Viv. et Fos.* i. 438.

Fos. Upper Lias, Wurtemberg.

5. BELEMNOSEPIA SAGITTATA.

Shell elongate, dilated in front, lanceolate, with short lateral wing behind.

Geoteuthis sagittata *Munster*, *Beitr. Petref.* vi. t. 7. f. 3. t. 8. f. 4. t. 14. f. 4. 1843.
Belemnosepia sagittata *D'Orb. Paléont. univ.* t. 27. 1846, *Moll. Viv. et Fos.* i. 439.
G. angusta *Munster*, *MS.*

Fos. Upper Lias, Wurtemburg.

6. BELEMNOSEPIA HASTATA.

Shell narrow, elongate, narrow in front, lanceolate, blunt, with narrow wing behind.

Geoteuthis hastata *Munster*, *Beitr. Petref.* v. t. 8. f. 3. 1843.
Belemnosepia hastata *D'Orb. Paléont. univ.* t. 28. f. 1. 1846, *Moll. Viv. et Fos.* i. 439.

Fos. Upper Lias, Wurtemburg.

7. BELEMNOSEPIA SPECIOSA.

Shell like B. Bollensis, but narrower and more conic.

Geoteuthis speciosa *Munster*, *Beitr. Petref.* vi. t. 8. f. 2. 1843.
Belemnosepia speciosa *D'Orb. Paléont. univ.* t. 28. f. 2., *Moll. Viv. et Fos.* i. 440.

Fos. Upper Lias, Wurtemburg.

8. BELEMNOSEPIA BOLLENSIS.

Shell dilated, oblong, dilated in front, truncated; side wing rather narrow, sinuous.

Loligo Aalensis *Schubler*, *Zeiten. Wurtemb.* 34. t. 25. f. 4. 1830.
Loligo Bollensis *Schubler*, *Zeiten. Wurtemb.* 34. t. 25. f. 5. 7. 1830.
Fossil Sea Pens *Buckland*, *Min.* t. 28. f. 6, 7. t. 29. f. 1, 2. t. 30. 1836.
Belopeltis sinuatus *Voltz*, *Bull. Soc. Géol.* ii. 40. 1840, *Mém. Soc. Strasb.* iii. 1843. from Zeiten.
Geoteuthis Bollensis *Munster*, *Beitr. Petref.* vi. t. 14, f. 3. t. 8. f. 1.
Belemnosepia Bollensis *D'Orb. Paléont. univ.* t. 29. f. 1. 3. 1846, *Moll. Viv. et Fos.* i. 440.

Embalmed Calamary (Celæno, *Munster*). *Owen, Phil. Trans.* 1844, 84. t. 4. f. 2.??

Fos. Upper Lias, Wurtemburg and Lyme Regis.

9. BELEMNOSEPIA OBCONICA.

Shell conical, oblong, dilated in front, truncated; side wing narrow.
Geoteuthis obconica *Munster, Beitr. Petref.* v. t. 9. f. 1. 1843.
Belemnosepia obconica *D'Orb. Paléont. univ.* t. 29. f. 45. 1846, *Moll. Viv. et Fos.* i. 441.

Fos. Upper Lias, Franconia.

d. *Shell horny, shorter than the Back. Fin short, on the Middle of the Sides of the Back.*

9. ROSSIA.

Body separate at the neck, purse-shaped, rounded behind, truncated before. Cervical band none. Mantle supported in front or below by a small tubercle, fitting into an elongate cartilaginous groove at the base of the siphuncle, above at the nape a central ridge received into a groove. Fins oval, oblong, broad on the middle of the sides of the back.—*Head* large, depressed, narrowed behind the eyes. Eyes large, lateral, superior, with an inferior eyelid. Buccal membrane short, six-lobed. Ears behind, a little below the eyes.—Sessile *arms* strong, thick, conical, subulate, unequal; cups fleshy, globular, sessile, in two or four series; rings horny, convex, toothless; third and fourth pair distinctly webbed. Tentacular arms retractile into a large subocular cavity, long, cylindrical, with clubbed and finned ends; without any protective membrane for the cups, with pediceled spherical cups on two alternating lines; their rings swollen externally and toothed on the upper edge. —*Siphuncle* without any superior band at its junction with the head.—*Shell* horny, lanceolate, only occupying the anterior half of the body.

Rossia *Owen*, **J. Ross, Voy. Append.* 1835, *Trans. Zool. Soc.* 1828; *Weigm. Arch.* i. 298. 1836; *D'Orb. Céphal. Acép.* 1839, *Moll. Viv. et Fos.* i. 235. 1845; *Gray, Syn. B. M.* 92. 1842, *Proc. Zool. Soc.* 1847. 205; *Moller, Ind. Moll. Groen,* 3.; *Loven, Ind. Moll. Scand.* 3.

Sepiola sp. *Gervais & Van Beneden, Bull. Acad. Brux.* 1838; *Delle Chiaje, MS.; Desh.* in *Lamch. Hist.* ed. 2. xi. 221. 1845.

* *Cups of sessile Arms similar, equal.*—Rossia.

† *Cups of sessile Arms in two alternating Rows beneath, and four or more at the Tip. Fins contracted at their Junction with the Body.*

1. ROSSIA PALPEBROSA.

Body oblong. Head nearly as large as the body, swollen at the eyes. Fins placed anteriorly. Sessile arms short, very unequal; order of length, 3, 4, 2, 1; cups in two rows at the base, and in many rows at the end of the arms, with the rings on the inner side of the sphere. Tentacular arms elongate, with very many cups, which are smaller near the tip.

Rossia palpebrosa *Owen, Ross's Voyage, Nat. Hist.* 93. t. B. f. 1. and t. c. 1834; *D'Orb. Céphal. Acét.* 247. n. 2.; *Rossie*, t. 1. f. 6—10., *Moll. Viv. et Fos.* i. 256.

Sepiola palpebrosa *Gervais & Van Beneden, Bull. de l'Acad. Roy. de Bruxelles*, v. n. 7. 1838.

Hab. Atlantic Ocean, Prince Regent's Inlet, North Sea.

2. ROSSIA MACROSOMA.

Body smooth, short, rounded, broader than long. Fins thin, short, semicircular, larger in front. Head short. Sessile arms subulate, rather compressed, elongated, unequal; order of length, 3, 4, 1, 2; cups spherical, in two distinct rows at the base, and four at the tip; rings large, smooth, and entire. Tentacular arms slender; cup at the base of the club large, gradually diminishing in size, and augmenting in number, towards the end. Shell lanceolate, two thirds the length of the body.

Sepiola macrosoma *Delle Chiaje, MS.; Gervais et Van Beneden, Bull. de l'Acad. de Brux.* vi. n. 1. 1838.

Rossia macrosoma *D'Orb. & Féruss. Céphal. Acét.* 245. *Sepiola*, t. 4. f. 13—24. 1839, *Moll. Viv. et Fos.* i. 257. t. 11.

Hab. The Mediterranean, near Naples.

†† *Cups of sessile Arms in two Rows. Fins wide at the Junction with the Body.*

3. ROSSIA SUBULATA.

Body rather elongate, blunt behind. Fins rounded, largest at their junction with the body. Sessile arms unequal; relative length, 4, 3, 2, 1; cups alternate in two rows, shortly pediceled.

Tentacular arms long, slender.—Body, head, and arms pale rose-coloured, red-dotted.

Sepiola subulata *Eyd. MS.; Gervais et Van Beneden, Bull. de l' Acad. Roy. de Bruxelles*, v. n. 7. 1838 (Note sur le genre Sepiola.)

Rossia subulata *D'Orb. & Fér. Céphal. Acét.* 249. n. 3. 1839, *Moll. Viv. et Fos.* i. 259.

Hab. Indian Ocean, Manilla.

** *Cups of lateral three Pairs of Arms very large, peduncled, distant; Cups of other arms small, crowded, equal. Tentacular arms tapering.*—Heteroteuthis.

4. Rossia dispar.

Body ovate, rounded, and rather tapering behind. Fins roundish, rather behind the middle of the back. Sessile arms rounded externally; four upper pairs slightly webbed together, third and fourth slightly webbed on the side, ventral pair separate below; cups small, globular; third pair finned, with a very few large globular cups. Tentacular arms slender; club scarcely marked, compressed externally, with very minute cups placed in several series.

Rossia dispar *Rüppell, MS. Brit. Mus.*

Sepiola dispar *Rüppell*, in *Giorn. del Gabin. di Messina*, xxvi. 1845.

Hab. Sicily.

a, b. Sicily. In spirits. From Edward Rüppell, M.D.

*** *Cups peduncled.*

5. Rossia ? Owenii.

Cups large, distinct, on long peduncles, arranged in three rows, those of the centre row not half the size of the side ones; on the first pair of arms more numerous, more equal in size, and smaller, than on the other arms.

Rossia Owenii *Ball, Trans. Roy. Irish Acad.* 1843; *Thompson's Report of Brit. Assoc.* 1843, p. 248.; *D'Orb. Moll. Viv. et Fos.* i. 259. n. 4.

Hab. Ireland, Dublin Bay. Ball, 1839.

6. Rossia ? Jacobi.

Larger than R. Owenii; arms shorter; cup smaller. Mouth

with a hexagonal membrane, with a ridge running to the second, third, and fourth pairs of arms; on the first pair it passes upon the web between the first pair of arms, where it bifurcates and runs on each side.

Rossia Jacobi *Ball, Trans. Roy. Irish Acad.* 1843; *Thompson's Report of Brit. Assoc.* 1843, p. 248.; *D'Orb. Moll. Viv. et Fos.* i. 259. n. 5.

Hab. Ireland, Dublin Bay. Dr. A. Jacob, 1840.

B. *Head attached to the Back of the Mantle by a broad cervical Band. Fin short, in the Middle of the Sides of the Back.*

10. SEPIOLA.

Body short, purse-like, rounded behind, truncated before. Cervical band broad. Mantle with an oblong ridge near the edge fitting into a groove on the sides of the base of the siphuncle. Fins on the middle of the sides of the back far apart, contracted at the base.—*Head* short. Eyes large, prominent; inferior eyelid distinct. Buccal membrane short, six- or seven-lobed. Ear simple, beneath and behind the eye. Aquiferous apertures two; one brachial, between the third and fourth pairs of arms; the second lacrymal, very small, above and behind the eye. Buccal apertures none.—Sessile *arms* conical, subulate, unequal; cups spherical, longly pediceled; rings horny oblique, convex externally; third and fourth pairs slightly webbed at the base. Tentacular arms retracted into a suborbical cavity, elongate, and finned, with very many very small longly pediceled cups in eight series.—*Siphuncle* with an internal valve, and no central upper band at its junction with the head.—*Shell* horny, sublinear, narrow at the top, wider in front, and rather dilated behind, not more than half the length of the back, with a medial groove and thickened edges.

Sepiola *Rondelet. Piscis et Aquat.* i. 510. 1554; *Aldrovand. de Moll.* cap. 5. 1606.

Sepiola *Leach, Zool. Misc.* iii. 137. 1817, *Journ. Phys.* lxxxvi. 674. 1817; *Féruss. et D'Orb. Céphal. Acét.* 1839; *D'Orb. Moll. Viv. et Fos.* i. 215. 1845; *Risso, Eur. Merid.* 1826; *Blainv. Malac.* 1825; *Grant, Trans. Zool. Soc.* i. 1838; *Owen, Trans. Zool. Soc.* ii. 1838; *Gervais et Van Beneden, Bull. Acad. Brux.* v. 1838, vi. 38. 1839.

Calmars sect. A. ou Sepioles *Blainville.*

Sepia sp. *Linn. Gmelin, Goldfuss.*

Loligo sp. *Lamarck*, 1799 ; *Férussac, Tabl. Syst.* 24.
Sepiolæ (les Sepioles) *Risso, Eur. Merid.* iv. 7. 1826, not Lamck.
Sepiolidæ (pars) *Leach, Zool. Misc.* iii. 137. 1817.
Octopodia sp. *Schneid. Samml. Verm. Abh.* 116. 1784.
Sepiolidea *D'Orb. Moll. Viv. et Fos.* i. 249.

* *Body and Head smooth internally. Cartilage of Mantle narrow, linear, oblong.*
† *All the sessile Arms with two alternating Rows of Cups to the Tip.*

1. SEPIOLA RONDELETI.

Body oblong, smooth, rounded behind. Fins oval. Sessile arms short, rather unequal; proportion of length, 2, 3, 4, 1; cups globular, in two close, regular, alternating, series; rings entire. Tentacular arms short; club small, compressed, obliquely striated externally; cup spherical, very small, with eight larger ones irregularly disposed, and with entire rings; the third pair of arms the least rounded externally; ventral pair compressed, keeled. Shell with a medial groove and thickened margin.

Sepiola *Rondeletius, de Piscibus*, lib. xvii. cap. x. p. 519. 1554. *Bossuet, de Aquatil.* 204.; *Johnston, Hist. Nat. de Piscib.* lib. i. cap. iii. t. 1. f. 8. p. 8.; *Ruysch, Theatr. Evang.* t. 1. f. 1.
Sepiola Rondeleti *Gesner, de Aquatil.* lib. iv. 855. 1558; *Aldrovand. de Moll.* lib. v. 63. 1642; *Leach, Nat. Miscell.* iii. 138. (1817); *Rang, Mag. de Zool.* 70. t. 95.; *Gervais et Van Beneden, Bull. Acad. Roy. Bruxelles*, v. n. 7. p. 8.; *D'Orb. et Féruss. Céph. Acét.* 330. n. 2., *Sepioles*, t. 1. f. 1—6. t. 2. f. 3, 4. t. 3. f. 6—9.; *Potiez et Michaud, Gal. des Moll.* i. 7. n. 1.; *D'Orb. Moll. Viv. et Fos.* i. 249. n. 2. t. 10. f. 13.; *Thompson, Rep. Brit. Ass.* 245. 1843.
Sepia Sepiola *Linn. Syst. Nat.* edit. 12. 1096. n. 5. 1767; *Scopoli, Aserv. Zool.* p. 128.; *Herbst. Eniseit. zur Kennt. der Gew.* 80. n. 4.; *Gmel. Syst. Natur.* edit. 13. 3151.; *Wulfen, Nov. Act. Phys. Med. Acad. Nat. Cur.* viii. 235.; *Martens, Reise nach Venedig*, ii. 436.
Loligo Sepiola *Lamck. Mém. de la Soc. d'Hist. Nat. de Paris*, 16. 1799, *Anim. s. Vertèb.* vii. 664. n. 4.; *Penn. Brit. Zool.* iv. 54. t. 29. f. 46. 1777; *Barbut, Worms*, 76. t. 8. f. 5.; *Brug. E. M.* t. 77. f. 3.; *Blainv. Dict. Sc. Nat.* xxvii. 184.; *Carus, Icon. Sepiar. Nov. Act. Acad. Nat. Curios.* xii. 318. t. 29. f. 2, 3.; *Payraudeau, Cat. des Moll. de Corse*, 173. n. 353.; *Philippi, Enum. Moll. Sic.* 241. n. 3.

Sepiola vulgaris *Grant, Trans. Zool. Soc. Lond.* i. 77. 1833.
Sepiola Grantiana *Féruss. Sepioles*, t. 2. f. 3, 4., *Magas. de Zool. Bull.* p. 66. 1835.
Sepiola Devigniana *Gervais & Van Beneden, Bull. Acad. Brux.* p. 10. 1838.

Hab. British Channel and the Mediterranean.

a, b, c. Medway, near Nore. In spirits. Presented by Rev. J. Henslow. Mus. Leach.
d. Berwick-upon-Tweed. In spirits. Presented by G. Johnston, M. D.
e, f. Mediterranean. In spirits. Presented by R. B. Webb, Esq.
g. Sandgate. Not good state. In spirits. Presented by Rev. G. E. Smith.
h. Hastings. In spirits. Presented by W. E. Leach, M. D.
i, j. ——— ? In spirits. ——— ? Some of the cups of the sessile arms larger than the rest.

2. Sepiola Oweniana.

Body elongate, ovate, smooth, rather pointed behind. Fins very small, far apart, nearly circular. Sessile arms elongate, slender, subulate, unequal; order of their length, 2, 3, 4, 1; cups oblique, rather compressed, rounded, with a large opening, in two distinct alternating lines; rings entire. Tentacular arms very long, very slender; club small; cups very crowded, and exceedingly minute; aquiferous pores two. Shell ——— ?

Sepiola Oweniana *D'Orb. & Féruss. Céph. Acét.* 229. n. 1., *Sepioles*, t. 3. f. 1—5. 1839; *D'Orb. Moll. Viv. et Fos.* i. 252. n. 5.

Hab. ——— ?

3. Sepiola ? Japonica.

Body oblong. Fin widened. Sessile arms unequal, dorsal short, lateral ones longest; cups in two separate alternating lines, with a clavate muscular tube up between the cups. Tentacular arms long, cylindrical, scarcely enlarged at the end; cups very minute, only one fourth of the size of those of the sessile arms. Shell ——— ?

Tilesius, Krusenstern, Voy. t. 88. f. .
Sepiola Japonica *D'Orb. & Féruss. Céph. Acét.* 234. n. 3. 1839; *D'Orb. Moll. Viv. et Fos.* i. 251. n. 3.

Hab. Japan.

†† *The sessile Arms with two Rows of Cups; the lower Pair with eight Rows of smaller Cups at the Tip.*

4. SEPIOLA ATLANTICA.

Body oblong, purse-shaped, rounded behind. Fins oval, far apart. Sessile arms short, unequal; proportionate length, 3, 2, 4, 1; cups small, oblique, in two series; lateral arms larger; fourth or the ventral pair with two rows at the base, seven or eight crowded rows of smaller cups at the tip. Tentacular arms rather long. Shell linear, narrow, gradually enlarged upwards, and spathulate behind the tip, sides thickened.

Loligo Sepiola *Bouchard, Cat. des Moll. Mar. du Boulonnais*, 71.? 1835.

Sepiola vulgaris *Gervais & Van Beneden, Bull. de l'Acad. de Bruxelles*, iv. n. 7. 1838, not Grant.

Sepiola atlantica *D'Orb. & Féruss. Céphal. Acét.* 235. n. 4., *Sepioles*, t. 4. f. 1—12. 1839; *D'Orbigny, Moll. Viv. et Fos.* i. 247. t. 10. f. 1—12. 1845.

Sepiola oceanica *D'Orb. Moll. Viv. et Fos.* t. 10. f. 13. 1845.

Hab. Atlantic Ocean.

M. D'Orbigny, at page 247., describes the dorsal pair of sessile arms as having four rows of cups, but he does not mention this in the longer description. The British specimens in the British Museum do not belong to this species.

††† *The sessile Arms with eight Rows of Cups.*

5. SEPIOLA STENODACTYLA.

Body short, rounded behind. Fins subcircular. Head large. Sessile arms thick and short, rather unequal; cups large, spherical, in seven or eight rows, rather irregularly disposed. Tentacular arms long, slender; club indistinct; cups very minute.—Purple, arms cross banded.

Sepiola stenodactyla *Grant, Trans. Zool. Soc. Lond.* 1833, i. 84. t. 11. f. 1, 2. and f. 6. apex of sessile arms; *Gervais et Van Beneden, Bull. de l'Acad. de Bruxelles*, v. n. 7. from Grant; *D'Orb. et Féruss. Céph. Acét.* 238. n. 5., *Sepioles*, t. 2. f. 1, 2. 6.; *D'Orb. Moll. Viv. et Fos.* i. 252. n. 4.

Hab. Mauritius. Mus. Zool. Soc.

The name *stenodactyla* must have originated in a mistake, for Dr. Grant expressly says the arms are proportionally much thicker and shorter than in *S. vulgaris*, l. c. p. 85.

Body and Head tubercular beneath; internal Cartilage of Mantle broad, contracted in the Middle.—Sepiolidea *D'Orb.*

6. Sepiola lineata.

Head and body smooth above, strongly tubercular on the sides beneath, tubercle with a horny centre, dorsal edge of mantle bearded. Body short, rounded. Sessile arms short, quadrangular, rather unequal; two upper pairs slenderer and shorter, and webbed at the base; cups hemispherical, in two alternate regular series on the base, and then small and in four series; their rings very high, and with an external border. Tentacular arms slender, lanceolate at the end, and with twenty series of very numerous, exceedingly small, crowded cups.—Whitish, with longitudinal blue or opake white lines.

Sepiola lineolata *Quoy & Gaim. Zool. Voy. Ast.* ii. 82., *Moll.* t. 5. f. 8—13. 1832; *Gervais et Van Beneden, Bull. de l'Acad. de Bruxelles*, v. 7.

Sepioloïdea lineata *D'Orb. & Féruss. Céphal. Acét.* 240. t. 3. f. 10—18. 1834, *Ann. Sci. Nat.* xvi.; *D'Orb. Moll. Viv. et Fos.* i. 242. t. 9.

Hab. Jervis Bay, New Holland.

11. FIDENAS.

Body oblong, rounded behind, united to the head by a broad cervical band; a linear cartilage on each side, in the base of the siphuncle. Fins oblong, on the sides of the back.—*Head* moderate. Eyes large, lateral.—Sessile *arms* subulate, roundish, elongated, tapering, free, except the third and fourth pairs, which are united together by a short web. Cups very small, globular, two-rowed, longly pedunculated; peduncles suddenly contracted, very thin near the cup. Tentacular arms destroyed? —*Siphuncle* very large, long, free from the head.—*Shell* ——— ? or none.

Is this the same as, or allied to, *Rossia subulata?* but the cups are said to be supported on a short pedicel; has that species a cervical band? for the bone is described as like *Sepiola.*

1. Fidenas Penares.

Hab. Indian Ocean.

a. Singapore. In spirits. Not good state, lost the pedunculated arms.

Suborder II. *SEPIAPHORA.*

Shell cellular, calcareous; back hard; cavity filled with laminæ, separated by numerous cells.—*Head* united to the mantle by a broad cervical band. Mantle attached behind, free in front, and with two internal cartilaginous longitudinal ridges fitting into cartilaginous grooves in the base of the sides of the siphuncle. Fin as long as the sides of the back.

Teuthomorpha (Sepiæ) (pars) *Bronn, Gesch. der Nat.* iii. 588.

Fam. VI. SEPIADÆ.

Body short, oval or rounded, depressed. Fins lateral, separated from one another behind by a neck or free space.

Head broad. Eyes lateral. Lower eyelid distinct. Auricular ridges none. Buccal membrane without cups.

Sessile *arms* with four rows of cups; horny ring of the cups uniformly convex, and narrowed above and below, without any external ridges. Tentacular arms entirely retractile into the cell at their base.

Siphuncle without any superior band at its junction with the head, with an internal valve.

Shell internal, as long as the back, calcareous, filled with irregular cells, without any siphon.

Sepidæ (pars) *D'Orb. Moll. Canar.* 20. 1837, *Moll. Viv. et Fos.* i. 237. 1845.

Sepiana *Gray, Proc. Zool. Soc.* 1847, 205.

Sepiadæ *Owen, Trans. Zool. Soc.* ii. 2. 1838; *Gray, Syn. B. M.* 1842. 92.

Sepioïdæ *Agassiz, Nomencl.*

Sepiacea (pars) *Desh. Ency. Méth.* ii. 1830.

Sepiæ (les Seiches) *Risso, Eur. Merid.* iv. 7. 1826.

1. SEPIA.

Body large, ovate or oblong, fleshy, depressed, rounded behind, with a rounded projection on the front of the dorsal edge. Fin narrow, lateral, bordering the whole side of the body, and separate behind. The ventral part of the mantle furnished with an oblique oblong tubercle fitting to a concavity in the sides of the

lower part of the siphuncle; the cervical part under the front of the shell, with longitudinal central ridge fitting into a groove on the back.—*Head* very large, wider than long, without any crest or cervical plaits. Eyes large, with an inferior eyelid, and a lacrymal opening in the front of the folds of the eyelid. Ear at the lower part of the globe of the eye. Buccal aquiferous openings six, between the base of the arms and the lips; buccal membrane seven-lobed, the two lower lobes least marked.—Sessile *arms* short, strong; dorsal pair compressed, lateral pair depressed, third pair with a membranous crest; protecting membrane of the cups very short; cups spherical, fleshy, oblique peduncled, in four rows; fourth pair free, rest united by a slight web at the base. Tentacular arms entirely retractile, long, slender; terminal club large, with an external fin; horny ring convex externally, contracted above and below.—*Siphuncle* large, short, without any band at the junction to the head, and with a large internal valve.—*Shell* (Sepiotaire *Blainv.*) embedded in the back of the animal, as long as the body, calcareous, depressed, ovate or oblong, externally convex, rugose, hard, with a horny edge and acute tip. The cavity is filled with very oblique layers of a cellular spongy substance, sometimes leaving a small, simple, conical cavity under the apex.

Sepia *Plinius.*
Sepia sp. *Linn. Cuvier, Anat. Comp.* 1800, *Règ. Anim.* ii. 365. 1817.
Sepia *Lamck, Syst.* 59. 1801; *Blainv. Malac.* 1825; *Gray, R. Zool. Soc.* 1847, 205.; *D'Orb. Moll. Viv. et Fos.* i. 261. 1845.
Octopodia sp. *Schneider.*
Sæpia *Dumeril, Zool. Anat.*
Shell. Beloptera A. *Blainv. Malac.* 621. 1825, *Belemn.* 110. 1837.
Sepiostera *Desh. Lyell, Princ. Append.* 40. 1833.
Sepiostaria *Blainv. Belemn.; Voltz, Mém. Soc. Strasb.* 1830.
Belosepia *Voltz, Belemn.* 23. 1830.

The shells of the species may be arranged as follows:—

* *Shell oblong.*

† *Apex very blunt.* S. officinalis, n. 1. *Férussac, Céph. Crypt.* t. 2. S. latimanus, n. 5. t. 12. f. 1, 2.

†† *Apex produced.* S. vermiculata, n. 7. t. 13.*
S. Rouxii, n. 2. t. 19.
S. Rappiana, n. 6. t. 10. S. Bertheloti, n. 12. t. 11. t. 23.
S. Hierredda, n. 4. t. 13. t. 18.
S. aculeata, n. 15. t. 5. and t. 25. S. Blainvillii, t. 21.
S. rostrata, n. 22. t. 8. t. 26.

††† *Apex very blunt, and produced.* S. tuberculata, n. 6. t. 6. (S. papillata, t. 3. S. mammillata, t. 4.*) S. Lefebrei, n. 8. t. 24. f. 1. 6.

** *Shell oblong, produced behind.*

S. inermis, n. 20. t. 6.* (S. sinensis, n. 20.) S. ornata, n. 19. t. 22. Microcheirus, n. 21. (inermis, t. 20.)

*** *Shell very narrow behind, and arched.*

† *Apex simple.*

S. australis, n. 18. t. 12. f. 7—11. S. Rupellaria, n. 16. t. 13. f. 10. 13. S. capensis, n. 28. t. 7. f. 113. S. Orbigniana, n. 27. f. 5. S. australis, n. 23. t. 7. f. 4.

†† *Apex dilated.*

S. elegans, n. 26. t. 8. f. 1—5. S. elongata, n. 17. t. 24. f. 7—10.

The shell of *S. officinalis* and *S. apama* have the inside of the front part, which is next to the back of the animal, covered with a hoodlike horny plate, apparently formed of the continuation of the cartilaginous margin which has not been observed in the other species.

See Longchamps (*Mém. Soc. Lin. Norm.* v. 1835, 79.) and Buckland (*Bridgewater Treat.* ii. t.) on the structure of the shell.

Synopsis of the Sections of the Genus.

§ Sessile Arms with small equal Cups, all in four regular series.

* Tentacular Arms with five or six series of unequal-sized Cups.

** Tentacular Arms with five or six series of subequal moderate-sized Cups.

3 * Tentacular Arms with twenty series of unequal-sized Cups.

4 * Tentacular Arms with eight or ten series of small equal Cups.

§§ Sessile Arms with small equal Cups; the two dorsal Arms with only two rows, rest with two and four.

§§§ Sessile Arms with unequal-sized large and small Cups.

N.B.—When the animal is unknown, the species is arranged next to that whose shell it most resembles.

§ *Sessile Arms with small equal Cups placed in four regular alternating Lines.*

Tentacular Arms with unequal-sized Cups placed in five or six Lines.

1. SEPIA OFFICINALIS.

Body ovate, depressed, smooth. Head with two elongated, and some smaller beards above. Sessile arms short, strong, unequal; order of length, 4, 3, 2, 1; ring of cups smooth, entire. Tentacular arms much enlarged, with six alternating lines of cups, the five central cups much larger; rings of the larger cups smooth, of the smaller ones toothed. Shell ovate, compressed, wrinkled above, semi-cartilaginous on the edge and behind, rounded posteriorly; when young the apical beak is conical, prominent, and the upper part of the last internal plate occupied; half the beak becomes immersed in the cartilages, and the plate is diminished to one third the length of the cavity in the adult.—Back purple, with darker cross bands, forked, and with small white spots on the side.

Sepia officinalis *Linn. Fauna Suecica*, n. 2106., *Syst. Nat.* edit. 12. 1095. n. 2.; *Gmel. Syst. Nat.* edit. 13. 3149. n. 2.; *Scopoli, Hist. Nat. Obs. Zool.* 127.; *Pennant, Brit. Zool.* iv. 55.; *Gronovius, Zoophyl.* 244. n. 1021.; *Brug. Encyc. Méth.* t. 76. f. 56.; *Wulfen, Nov. Act. Phys. Med. Berlin*, viii. 379.; *Lamarck, Mém. Soc. Hist. Nat. Paris*, 4., *Syst. des Anim. s. Vert.* 59., *Hist. An. s. Vert.* vii. 668.; *Bosc, Hist. Nat. des Vers*, i. 45. n. 1.; *Leach, Nat. Miscell.* iii. 138.; *Carus, Icon. Sep. Nov. Act. Nat. Cur.* xii. 317. t. 28.; *Martens, Reise nach Venedig*, ii. 436.; *Payrad. Cat. Moll. de Corse*, 173. n. 54.; *Risso, Hist. Nat. Eur. Merid.* iv. 3. n. 10.; *Blainv. Dict. Sc. Nat.* xlviii. 284., *Faune Franç.* 18.; *Deshayes, Enc. Méth. Vers*, iii. 944. n. 1.; *Bouchard, Cat. Moll. Mar.* 72. n. 125.; *Potiez et Mich. Gal. Moll. de Douai*, i. 8. n. 1.; *Philippi, Enum. Moll. Sic.* 241. n. 1.; *D'Orb. Moll. des Canar.* 20. n. 4., *Céphal. Acét.* 260. n. 1., *Seiches*, t. 1, 2, 3. f. 1—3. t. 17. f. 12., *Paléont. univ.* t. 3. f. 1—5. t. 4. f. 13—16., *Paléont. étrang.* t. 3. f. 1—5. t. 4. f. 13—16.; *Cantraine, Malac. Nouv. Mém. de Brux.* xiii. 14. n. 1.; *D'Orbigny, Moll. Viv. et Fos.* i. 272. t. 12. f. 1—5. t. 13. f. 13—16.

Seiche commune *Montfort, Buff. de Sonnin. Moll.* i. 171.

Sepia rugosa *Bowdich's Elements of Conchology*, t. 1. f. 1.

Sepia *Schneider, Sammlung Verm.* 108.

Hab. Atlantic Ocean, Coasts of Europe and Africa, Mediterranean.

a. Torbay, Devonshire, England. In spirits. Presented by J. R. Griffith, Esq.

c. ——————— ? In spirits. Not good state.
d. Torbay. Egg. In spirits. Presented by J. R. Griffith, Esq.
e. Torbay. Young, one day old In spirits. Presented by J. R. Griffith, Esq.
f. ——————— ? In spirits. Not good state.
g, *h.* Shell. Adult. Dry. Coast of England.
i. Shell. Adult. Dry. Malta. Presented by Miss E. Attersoll.

2. Sepia Rouxii.

Body ovate, smooth, acuminate in front, rounded posteriorly. Fins broad. Head smooth. The buccal membrane provided with five prominent lobes; lower part thicker, fleshy, without any lobes; the lower bands not marked externally. Sessile arms elongate, unequal; order of length, 4, 3, 2, 1; with four rows of cups furnished with rings armed with long acute teeth on their border side. Tentacular arms with six rows of cups. the two middle rows composed of seven very large cups, armed with rings, with short teeth all round. Shell ovate, oblong, wrinkled and tuberculated, thickened underneath posteriorly, with a short blunt beak, and a very thick convex diaphragm occupies all the extremity of the cavity.

Sepia Rouxii *D'Orb.* in *Féruss. Céph. Acét.* 271. n. 3., *Seiches*, t. 19.; *D'Orb. Moll. Viv. et Fos.* i. 290.

Hab. Red Sea, Indian Ocean, Bombay.

a. Tunis, Africa. Adult. In spirits. Presented by Mr. Louis Frazer.
b. The bone of *a.*
c, *d.* Tripoli, Africa. Young. In spirits. Presented by J. Ritchie, Esq.
e, *f.* The bones of *c*, *d.*
g, *h*, *i.* The bones dry. Young.
j. Dalmatia. Young. In spirits. From Mr. Heckel's Collection.
k. The shell of *j.*

3. Sepia Vicellius.

Blackish, smooth. Sessile arms thick; lower rather larger; cups rather large, in four regular series; rings entire. Tentacular arms moderate; clubs moderate, slightly finned behind; cups smaller than those of the sessile arms, in five rows, the five or six of those in the central line about treble the size, with dark rings, very minutely and regularly bluntly toothed on the edge. Shell oblong, rather attenuated above, dilated behind; apex

blunt, not produced beyond the horny part at its base; back rugose, subconcentric.

Hab. ——————— ?

a. In spirits.
b. Its bone dry.

4. SEPIA HIERREDDA.

Body ovate, depressed, rather tuberculate. Fins broad. Head with a beard on each eye. Ear with a longitudinal and a transverse ridge. Sessile arms thick, unequal; order of their length, 4, 3, 1, 2; rings of cups with small teeth. Tentacular arms with very unequal cups in six lines, the middle ones being very large; the rings entire. Animal brown and yellow marbled, white-spotted, and with a series of six white lines on the sides. Shell ovate, compressed, wrinkled above, acuminated anteriorly, rounded posteriorly, with a long curved beak; the last plate in all ages occupied half the cavity.

Sepia Hierredda *Rang, D'Orb. et Féruss. Seiches*, t. 13., *Magaz. de Zool.* 75. t. 100.; *D'Orb. Moll. des Canar.* 21. n. 5., *Moll. Viv. et Fos.* i. 278.; *D'Orb. et Féruss. Céph. Acét.* 268. n. 2., *Seiches*, t. 13. t. 18.

Hab. Atlantic Ocean, Coast of Africa, Cape of Good Hope, Island of Teneriffe.

5. SEPIA LATIMANUS.

Body ovate, smooth, truncated in front, pointed behind. Fins narrow, blue-edged. Sessile arms slender, quadrangular, elongate, unequal; order of length, 4, 3, 2, 1; with four rows of cups; horny rings with very fine, close teeth. Tentacular arms dilated, strongly palmated, with five lines of cups, with six or eight very large ones, having their horny rings plaited on the edge. Shell oblong, rounded anteriorly, obtuse posteriorly, longly and acutely beaked.

Sepia latimanus *Quoy & Gaim. Zool. Voy. Astrol.* ii. 68., *Atl. Moll.* t. 2. f. 2. 11. 1832; *D'Orb. et Féruss. Seiches*, t. 12. f. 1—6. t. 17. f. 16, 17. (1839); *D'Orb. Moll. Viv. et Fos.* i. 291.

Sepia Rappiana *Féruss. Pl. des Seiches*, n. 10. (1834).

Hab. Indian Ocean, New Guinea, and the Celebes.

6. SEPIA TUBERCULATA.

Body ovate, tuberculated; tubercles very unequal, divided into lobes. Fins narrow. Head tuberculated on the back, sides, and round the eyes, smooth below. Sessile arms short.

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unequal; length, 4, 3, 2, 1; with four rows of cups, supported by rings. Tentacular arms thickly clubbed, with five rows of cups; four of them much larger, with oblique, entire rings. Shell very depressed, ovate, nearly equally round at each end, above smooth, and cartilaginous on the sides and ends; beneath very concave.

Sepia tuberculata *Lamck. Mém. Soc. Hist. Nat. Paris*, i. 9. t. 1. f. 1—6., *Hist. An. s. Vert.* 2d edit. vii. 668. n. 2.; *Bosc, Buff. de Deterv. Vers*, i. 45.; *Montfort, Buff. de Sonnin. Moll.* i. 274. t. 7.; *Blainv. Dict. Sc. Nat. Crypt.* f. 2—6., *Malacolog. Atlas*, t. 1. f. 2—6.; *Deshayes, Enc. Méth.* iii. 945. n. 2.; *D'Orb. et Féruss. Céphal. Acét. Seiches*, t. 3 ter, t. 4 bis, t. 6. t. 17. f. 13—15.; *D'Orb. Paléont. univ.* t. 3. f. 11., *Moll. Viv. et Fos.* i. 281. t. 12. f. 11.

Sepia papillata *Quoy & Gaim. Voy. Ast. Zool.* ii. 61. t. 1. f. 6—14. *Féruss. et D'Orb. Céph. Acét. Sepia*, t. 3.

Sepia mamillata *Leach, MS.; Féruss. et D'Orb. Céph. Acét. Sepia*, t. 4*.

Hab. Cape of Good Hope.

a. Shell of adult. Dry. Imperfect. Cape of Good Hope.

7. Sepia vermiculata.

Body ovate, smooth, acute anteriorly. Fins broad, largely separated behind, dotted with red. Head large. Sessile arms short, thick at their base, unequal; length, 4, 3. 2, 1; with four rows of cups, with entire rings. Tentacular arms cylindrical, very long; club flattened, with very numerous cups, eight or ten larger than the rest, with entire rings. Shell oblong, ovate, bluntly beaked posteriorly.

Sepia vermiculata *Quoy & Gaim. Voy. Ast. Moll.* ii. 64. t. 1. f. 1—5. (1832); *D'Orb. et Féruss. Céph. Acét. Seiches*, t. 3. bis; *D'Orb. Moll. Viv. et Fos.* i. 284.

S. Hierredda var.? *D'Orb.* l. c. 285.

Hab. Cape of Good Hope.

8. Sepia Lefebrei.

Animal ——— ? Shell ovate, oblong, rounded at each end, concentrically wrinkled above, nearly flat above, strongly gibbous and elevated in the middle beneath, with a border all round.

Sepia Lefebrei *D'Orb. Céphal. Acét.* t. 24. f. 1—6. (shell), *Paléont. univ.* t. 4. f. 5—6., *Moll. Viv. et Fos.* i. 288. t. 13. f. 5—6.

Hab. Red Sea.

Chiefly differs from *L. gibbosa* in the shell appearing to be broader.

9. SEPIA GIBBOSA.

Animal ——— ? Shell elongate, boat-shaped, rounded at each end, gibbous beneath, obtuse.

Sepia gibbosa *Ehrenberg, Symbolæ Phys. Sepia*, n. 2.; *D'Orb. Moll. Viv. et Fos.* i. 287.

Sepia gibba *D'Orb.* l. c. 288, 289.

Hab. Red Sea.

10. SEPIA APAMA.

Animal ——— ? Shell oblong, elongate; the posterior part much produced, subacute, with a strong callosity at the posterior edge of the cavity. Apex blunt, rugose; anterior extremity rounded, covered with strong cartilaginous side; central portion rather convex.

Hab. Australia.

a. Port Adelaide. Shell. Dry.

Most like *S. Lefebrei*, but the posterior extremity is much more produced and subacute, and the inner side of the central part is not convex.

** *Cups of tentacular Arms in five or six Series, subequal, moderate-sized.*

† *Shell oblong.*

11. SEPIA LYCIDAS.

Animal ——— ? Sessile arms with four series of rather large equal cups. Tentacular arms elongate: club distinct, slightly finned behind, with five series of cups; those of the middle of the arms equal-sized, nearly the size of those on the sessile arms; of the lower and upper end smaller. Shell oblong, rather elongate; slightly produced above; narrowed, produced, and rounded behind. Apex blunt; cavity with a strong, raised, rounded ridge on each side behind; disk convex, with a broad central concavity extending nearly the whole length.

a. Animal salted, from Canton market. Presented by T. Lay, Esq.

b. The shell (dry, rather broken) from *a.*

†† *Shell elongate, narrow.*

12. Sepia Bertheloti.

Body oblong, elongated, subcylindrical, smooth, blunt behind, and pointed in front. Fins narrow, broader behind. Ears simple. Sessile arms long, slender, unequal; order of length, 4, 2, 1, 3; cups in four rows, equal-sized. Tentacular arms long, slender, finned; cups in five rows, the central one largest, with oblique rings, toothed all round. Shell elongate, very narrow, finely wrinkled above, acuminated in front, and with a long acute beak, and wings on the side behind.—Purplish, with oblong pale spot on the side.

Sepia Bertheloti *D'Orb. & Féruss. Monog. des Céph. Acét.* t. 11. t. 23. 1835; *D'Orb. Moll. des Canar.* 21. n. 6. t. 11., *Moll. Viv. et Fos.* i. 277.

Hab. Atlantic Ocean, Teneriffe.

13. Sepia plangon.

Body oblong. Fins narrow, pale. Back of mantle much produced in front. Sessile arms rather thick; cups small, distant, in four rows. Tentacular arms slightly clavate, with a few very small, subequal cups. Shell elongate, narrow, dilated behind. Apex elongated, acute, recurved; cavity concave behind, with a strong, shelly, diverging ridge on each side, with a wide central groove.

a. Port Jackson. In spirits. Dr. J. Robertson, Antarctic Expedition.
b. The shell of *a.* dry.
c. Australia. Shell. Dry. Presented by A. Sinclair, M. D. R. N.

Shell most like *S. Orbignyanus*, but the inner part has not the ridges.

3* *Tentacular Arms with unequal-sized Cups placed in ten Series.*

14. Sepia Savignii.

Body ovate, oblong; back with triangular beards, forming a series on the sides; smooth below. Fins broad, as long as the body, equal. Sessile arms thick, very unequal; order of length, 4, 3, 2, 1; rings of cups toothed. Tentacular arms clubbed, with ten lines of cups, those of the two middle lines larger, with toothed rings. Shell – ——— ?

Sepia officinalis *Andouin, Expl. Somm. des Pl. d'Egypt*, t. 5. t. 1. f. 3. 1827.

Sepia Savignyi *Blainv. Dict. des Sc. Nat.* xlviii. 285. 1827; *D'Orb. et Féruss. Céphal. Acét. Seiches*, t. 4.; *D'Orb. Moll. Viv. et Fos.* i. 287.

Sepia Savigniana *Féruss. Seiches*, t. 4. 1828.

Sepia Pharaonis *Ehrenberg, Symb. Phys. An. Mollusc. Céphal. Sepiacea*, n. 1. 1831.

Hab. Red Sea.

4* *Tentacular Arms finned, with numerous, small, equal-sized Cups, placed in eight or ten Lines.*

† *Shell very narrow behind.*

15. SEPIA ACULEATA.

Body ovate, rounded, smooth, rather pointed behind. Fins broad, thick, commencing rather behind the front edge. Sessile arms elongate, unequal; order of length, 4, 3, 2, 1; cups globular, in four series, with rings minutely toothed all round. Tentacular arms with very small cups in ten or twelve lines, with distant acute teeth on the ring. Shell ovate, oblong, tubercularly wrinkled, depressed, rounded at the ends, and with a long, straight, acute beak, convex beneath in front, and concave behind.

Sepia aculeata *Van Hasselt, MS.; D'Orb. et Féruss. Céph. Acét. Seiches*, t. 5. bis, t. 25.; *D'Orb. Moll. Viv. et Fos.* i. 296.

Hab. Indian Ocean; Java.

16. SEPIA RUPELLARIA.

Animal ———— ? Shell elongated, very narrow, depressed, much arched behind, prolonged and acuminated in front; bisulcated above; one-ribbed longitudinally, posteriorly; concave underneath.

Sepia Rupellaria *D'Orb. & Féruss. Céphal. Acét. Seiches*, t. 3. f. 10—13. 1839, shell; *D'Orb. Moll. Viv. et Fos.* i. 276.

Hab. Neighbourhood of Rochelle, &c. Ireland? *Ball*, 1839.

17. SEPIA ELONGATA.

Animal ———— ? Shell very elongated, narrow, pointed in front, enlarged behind, and provided with a wing-like expansion and a long acute beak, rugose above, with a medial longitudinal rib; swollen beneath, gibbous in the centre.

Sepia elongata *D'Orb. & Féruss. Céphal. Acét. Seiches*, t. 24. f. 7—10. 1339, shell; *D'Orb. Paléont. univ.* t. 4. f. 7—10. shell, *Paléont. étrang.* t. 4. f. 7—10. shell, *Moll. Viv. et Fos.* i. 289. t. 13. f. 7—10. shell.

Hab. Red Sea.

18. Sepia Sinope.

Animal ———— ? Bone elongate, sublanceolate; back smooth, slightly concentrically wrinkled, with two deep grooves in the side of the centre of the back; rather tapering at the upper part; apex imperfect.

Sepia australis *Quoy & Gaim.* ? *Féruss. Céphal. Acét. Sepia*, t. 12. f. 9. shell (not D'Orb.).

a. China. Bone. Dry. Imperfect.

†† *Shell oblong, posterior end expanded, produced, cartilaginous, not beaked, convex beneath.*—Sepiella.

19. Sepia ornata.

Body ovate, elongated, very smooth, brown, spotted with white. Fins very broad, broader behind. Ears with broad thick edges. Sessile arms thick, short, unequal; length, 4, 3, 1, 2; cups in four rows; rings oblique, smooth on the narrow, and with short unequal teeth on the broad edge. Tentacular arms lanceolate, with very small close cups of equal size in eight or ten lines, with toothed rings. Shell oblong, elongate, straight, compressed, wrinkled above, obtuse anteriorly, winged posteriorly.

Sepia ornata *Rang, Magas. de Zool.* 1837, 76. t. 101.; *D'Orb. et Féruss. Céphal. Acét.* t. 22.; *D'Orb. Paléont. univ.* t. 3. f. 12. t. 4. f. 1, 2., *Paléont. étrang.* t. 3. f. 12. t. 4. f. 1, 2., *Moll. Viv. et Fos.* i. 280. t. 12. f. 12. club of tentacle, t. 13. f. 1, 2. shell.

Hab. Coasts of Africa, at Goree, Sénegal, &c.

20. Sepia sinensis.

Body oblong, elongate, smooth, narrow, blunt behind. Fins narrow, rather wider behind, beginning behind the front edge. Sessile arms with four series of small cups. Tentacular arms rather short, slender, without any distinct club; slightly impressed at the top externally; cups very minute or entirely wanting. Shell oblong, elongate, straight, rounded in front, hinder ends not beaked above, expanded and produced into a cartilage behind; convex beneath.

Sepia inermis *Hassell, MS.; Férussac, Céph. Acét.* t. 6*. not t. 20. part; *D'Orb. Moll. Viv. et Fos.* i. 295.
Sepia sinensis *D'Orb. Céph. Acét. Seiches*, t. 9. f. 1, 2. 1839, from Chinese drawing, *Moll. Viv. et Fos.* i. 299.
Niao-tse-in, *Encyclopédie Japonaise.*

a. China. In spirits. Presented by R. Card, Esq.
b. The shell of *a.*
c, d. Animals. Salted specimens, as sold in Canton market. Presented by Tradescant Lay, Esq.
e, f. The shell of *c.* and *d.*

21. SEPIA MICROCHEIRUS.

Body ovate, oblong, smooth, rounded behind, spotted with violet. Fins broad, thickened, wider behind. Ears with a raised edge behind. Sessile arms short, triangular, unequal; order of length, 4, 3, 1, 2; cups in four rows; rings entire on the narrow, and narrow teeth on the broad edge. Tentacular arms lanceolate; cups exceedingly small, equal-sized, in ten or twelve series. Shell ovate, oblong, wrinkled, acuminate in front, narrow and rounded behind; convex above, cartilaginous underneath, and expanded into two wings behind; beneath with a strong central groove in front.

Sepia microcheirus *Gray, Brit. Mus.* 1830.
Sepia inermis *Hasselt, MS.* fide *D'Orb. et Féruss. Céph. Acét. Seiches*, t. 20. f. 1—9. 1839, not t. 6.; *D'Orb. Paléont. univ.* t. 3. f. 9, 10., *Paléont. étrang.* t. 3. f. 9, 10., *Moll. Viv. et Fos.* i. 295. t. 12. f. 9, 10. ring of cup.

Hab. India.

a. India. Young. In spirits. Presented by General Hardwicke.
b. The shell of *a.* dry.
c. India. Young. In spirits.
d. The shell of *c.* dry.
e. India. Young.
f. The shell of *e.* dry.
g. India.? In spirits. Presented by Mr. John Leadbeater, senior.
h. The shell of *g.* in a bad condition. In spirits.
i. India. Very young. In spirits. Presented by General Hardwicke.

††† *Shell oblong, rounded behind, beaked*

22. SEPIA ROSTRATA.

Body thick, rounded, narrow before, obtuse behind. Fins thick, narrow in front, dilated behind. Sessile arms elongate, slender,

unequal; order of length, 4, 3, 2, 1; cups spherical, with very small smooth-edged rings. Tentacular arms lanceolate, with very small numerous equal-sized cups in many lines, and with toothless rings. Shell ovate, oblong, tubercularly wrinkled, depressed, broader in the middle, narrow behind, and furnished with an elongated compressed beak beneath; convex in front, concave and with a diaphragm behind.

Sepia rostrata *D'Orbigny, Céphal. Acét. Seiches*, t. 8. f. 6. 1826, t. 29. 1839, *Paléont. univ. & Paléont. étrang.* t. 4. f. 11, 12., *Moll. Viv. et Fos.* i. 293. t. 13. f. 11, 12. shell.

Hab. Indian Ocean, Bombay, Ceylon, and New Holland.

In this and in several of M. D'Orbigny's descriptions, the French and Latin versions differ. I have taken the French as being most probably the correct one.

23. Sepia indica.

Body short, round, smooth. Fins thick, narrow, broader behind. Sessile arms short, unequal; order of length, 4, 3, 1, 2; cups hemispherical. Tentacular arms very long, slender; cups very small, equal-sized, in ten or twelve series. Shell ovate. oblong, wrinkled, acuminate at each end, shortly beaked behind, with a thick convex diaphragm behind beneath.

Sepia Blainvillei *D'Orb. & Féruss. Céph. Acét.* t. 21. 1839, not Desh. 1837; *D'Orb. Moll. Viv. et Fos.* i. 295.

Sepia indica *D'Orb. Moll. Viv. et Fos.* i. 298. 1845.

? S. australis *D'Orb. Céphal. Acét. Sepia*, t. 7. f. 4. bone of young, *Moll. Viv. et Fos.* i. 294. not Quoy.

Hab. Bombay, New Holland.

a. Cape Upstart, Australia. In spirits. Presented by J. B. Jukes, Esq.

24. Sepia myrsus.

Animal ——— ? Bone oblong, the hinder extremity rounded, rather produced, shelly, with a slight thickening within; apex blunt, rather produced, inner surface suddenly thickened, the upper half convex, with a slight central depression.

Hab. China.

a. China. Shell. Dry.

25. Sepia Mestus.

Animal ——— ? Bone oblong, rounded behind; cavity narrow behind, rapidly widening (surface destroyed); apex elongated, acute, recurved, shelly.

...LIBRARY... OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC...

Hab. Australia.

a, *b*. Australia. Shell. Dry. Presented by Andrew Sinclair, M.D. R.N.

§§ *Sessile Arms with equal, small Cups. The upper Pair with two Rows of Cups.*

26. SEPIA ELEGANS.

Body ovate, oblong, elongate, smooth, acuminated anteriorly. Fins very narrow. Head smooth. Sessile arms short, unequal; length, 4, 3, 1, 2; cups spherical, oblique, in two rows on the dorsal pair and the base of the other, and in four rows on their ends, the second and middle rows of the latter larger. Tentacular arms long, with five series of small cups and three much larger ones; with the rings rather oblique and toothed. Shell elongated, arched behind, very narrow, winged and pointed in front, very narrow and winged behind, with a medial crest externally.

Sepia elegans *D'Orb. Tab. Méth. Seiches*, t. 8. f. 1—5. 1826; *Blainv. Dict. Sc. Nat.* xlviii. 284., *Faune Franç.* 19.; *Rang, Mag. de Zool.* 1837, 74. t. 99.; *D'Orb. et Féruss. Céph. Acét. Seiches*, t. 8. f. 1—5. t. 27. f. 3—6.; *D'Orb. Paléont. univ.* t. 3. f. 6—8., *Paléont. étrang.* t. 3., *Moll. Viv. et Foş.* i. 285. t. 12. f. 6—8.

Hab. Mediterranean, Messina, Adriatic, Malaga, and Coast of Algiers.

27. SEPIA ORBIGNYANA.

Body oblong, elongated, smooth. Fins narrow, thin. Head very large. Sessile arms short, triangular, unequal; order of length, 1, 4, 3, 2; cups subspherical, in two rows on the base of the three upper pairs, and four on the ventral pair; horny rings entire. Tentacular arms slender; club lanceolate; cups in five lines, with five or six very large ones in the middle line. Shell elongated, grooved above, granular; narrow and acuminated in front; narrowed, thin, rounded, and with an elongated recurved beak behind.—Head and back violet, beneath white.

Sepia Orbignyana *Féruss. D'Orb. Tab. Méth. des Céph.* 66. 1826, *Ann. Sc. Nat.* 1826; *Blainv. Faune Franç.* 19.; *D'Orb. et Féruss. Céphal. Acét. Seiches*, t. 5. t. 27. f. 1, 2.; *D'Orb. Paléont. univ.* t. 4. f. 3, 4., *Paléont. étrang.* t. 4. f. 3, 4., *Moll. Viv. et Fos.* i. 274. t. 13. f. 3, 4.

Hab. Atlantic Ocean and Mediterranean, Naples.

§§§ *Sessile Arms provided with very unequal-sized Cups, the middle one largest. Shell narrowed behind.*

28. SEPIA CAPENSIS.

Body ovate, oblong, smooth. Fins dilated behind. Sessile arms short, strong; cups spherical, peduncled, very unequal in size, the middle one largest. Tentacular arms scarcely clubbed; cups slightly oblique, in three series, the middle series with three much largest, and with the rings toothed on the inner edge. Shell much depressed, oblong, elongate, enlarged, and pointed in front, tapering, thin, very obtuse, and with an acute projecting beak behind.

Sepia capensis *D'Orb. Tab. Méth. Céph. Seiches*, t. 7. f. 1—3. 1826, *Moll. Viv. et Fos.* i. 283.; *D'Orb. et Féruss. Céph. Acét.* t. 7. f. 1—3. t. 12. f. 7—11. t. 17. f. 18, 19.

Sepia australis *Quoy & Gaim. Voy. Ast. Zool.* 70. t. 5. f. 3—7. 1832, not D'Orb. 1826.

Hab. Cape of Good Hope.

Var. Shell larger, scarcely so arched and with much longer spine than in M. D'Orbigny's figure. Perhaps a distinct species.

a. Sydney. Shell. Dry. Presented by J. Edwards, Esq. R. N.

b. Australia. Shell. Dry. Presented by A. Sinclair, M. D. R. N.

4 § *Doubtful Recent Species.*

29. SEPIA MUCRONATA.

Sepia mucronata *Rafin. Précis des Découv. Somiol.* 29. 1814; *D'Orb. Moll. Viv. et Fos.* i. 299.

Hab. Sicily. Perhaps this is the *S. elegans.*

30. SEPIA ANTILLARUM.

Sepia Antillarum *D'Orb. Moll. des Antilles*, i. 33. n. 8. 1838, *Moll. Viv. et Fos.* i. 300.

Sepia *Brown, Nat. Hist. of Jamaica*, 386.

Hab. Jamaica.

5 § *Fossil Species.*

* *Tertiary, Paris Basin.*

31. SEPIA SEPIOIDEA.

Shell thick, narrow behind; beak thick, elongate, acute; lower lamina thick, reflexed, deeply radiated, edge toothed; upper callosity deeply rugose.

Guetard, Mém. t. 2. f. 30.
Os de Seiche *Cuvier, Ann. Sci. Nat.* ii. 482. t. 22. f. 1, 2. 1824.
Beloptera Sepioidea *Blainv. Malac.* add. 621. t. 7. 1825., *Mém. Belemn.* 110. t. 1. f. 2.
Sepia Cuvieri *D'Orb. Tab. Céphal.* 67. 1825; *Galeotti, Mem. del Brab.* 140. 1837; *Desh. Fos. Paris*, 758. t. 101. f. 7, 8, 9.
Belosepia Cuvieri *Voltz, Jahrb.* 410. 1830; *D'Orb. Ann. Sci. Nat.* xvii. t. 11. f. 11. 13. 1842.
Sepia longispina *Desh. Fos. Paris*, 757. t. 101. f. 4, 5, 6. 1837.
S. longirostris *Desh. F. P.* 757. t. 101. f. 10, 11, 12. 1837.
S. Blainvillii *Desh. F. P.* 757. t. 101. f. 13, 14, 15, 1837.
S. Sepioidea *D'Orb. & Féruss. Céph. Acét. Sepia*, t. 3. f. 5. t. 14. f. 4—12. t. 16. f. 7. 9.; *D'Orb. Paléont. univ.* t. 7. f. 4. 8., *Moll. Viv. et Fos.* i. 269.

Fos. Paris Basin.

a. End of shell and beak. Paris. Presented by J. E. Gray, Esq.

32. SEPIA COMPRESSA.

Shell, hinder extremity very much compressed laterally; beak thick, acute, recurved, lower plate short; lower callosity narrow, prominent; cavity slender, deep, marked with arched striæ.

Beloptera compressa *Blainv. Belemn.* 110. t. 4. f. 10. 1837.
Sepia Defrancii *Desh. Fos. Paris*, 759. t. 101. f. 1. 3. 1837.
Sepia compressa *D'Orb. & Féruss. Céph. Acét. Sepia*, t. 16. f. 4. 6. 1839; *D'Orb. Paléont. univ.* t. 7. f. 1. 3., *Moll. Viv. et Fos.* i. 271.

Fos. Paris Basin.

** *Upper Oxford Clay.*

33. SEPIA HASTIFORMIS.

Shell elongate, depressed, hastate, ornamented with longitudinal lines of large tubercles, attenuated in front, dilated behind, sides winged and blunt.

S. *Knorr, Samml.* i. t. 22. f. 2.?
Sepia hastiformis *Rüppell, Abbild. Besch.* 9. t. 3. f. 2. 1829; *D'Orb. et Féruss. Céph. Acét. Seiches*, t. 16. f. 1, 2.; *D'Orb. Paléont. univ.* t. 5. f. 4. 6., *Moll. Viv. et Fos.* 265.

Fos. Lithographic Stone, Solenhofen.

34. SEPIA CAUDATA.

Shell elongate, with transverse lines of large tubercles, attenuated and produced in front, dilated and winged behind.

Sepia caudata *Munster*, *Taschenb.* 252. 1837 ; *Féruss. et D'Orb. Céphal. Acét. Sepia*, t. 15. f. 1, 2. ; *D'Orb. Paléont. univ.* t. 5. f. 1. 3., *Moll. Viv. et Fos.* i. 267.
S. hastiformis (adult) *D'Orb.* l. c. 267. ?

Fos. Oxford Clay.

35. SEPIA ANTIQUA.

Shell depressed, with concentric lines of very small tubercles ; attenuated in front ; dilated, winged, and pointed behind.

Sepia antiqua *Munster*, *Taschenb.* 252. 1837 ; *D'Orb. et Féruss. Céph. Acét. Sepia*, t. 14. f. 1, 2. ; *D'Orb. Paléont. univ.* t. 6. f. 1. 3., *Moll. Viv. et Fos.* i. 266.

Fos. Lithographic Stone, Solenhofen.

36. SEPIA LINGULATA.

Shell ovate, oblong, with concentric lines of tubercles ; acuminated before and behind.

Sepia lingulata *Munster*, *Taschenb.* 252. 1827 ; *D'Orb. Céph. Acét.* t. 14. f. 3. t. 15. f. 4, 5. t. 16. f. 2. 1839, *Paléont. univ.* t. 6. f. 4. 6., *Moll. Viv. et Fos.* i. 268.
Sepia obscura *Munster*, l. c. 252.
S. regularis *Munster*, l. c. 252.
S. gracilis *Munster*, l. c. 252.

Fos. Solenhofen.

37. SEPIA VENUSTA.

Shell ovate, compressed, transversely striated ; subangular in front, three-lobed and slightly winged behind.

Sepiolithes venustus *Munster*, *MS.*
Sepia venusta *Munster*, *Taschenb.* 252. 1837 ; *D'Orb. et Féruss. Céph. Acét.* t. 15. f. 6. 1837 ; *D'Orb. Paléont. univ.* t. 5. f. 7., *Moll. Viv. et Fos.* i. 268.

Fos. Solenhofen.

Suborder III. *BELEMNOPHORA.*

Shell calcareous, internal, chambered; chamber traversed by siphon.

Cephal. Polarnaxia Spirularia *Rafin. Anal. Nat.* 141. 1815.
Cephal. Spiriformia and Belemnomorpha *Bronn, Gesch. der Nat.* iii. 536.

FAM. VII. LITUIDÆ.

Body subcylindrical, oblong, end rounded; sometimes furnished with a thickened belt, and with a small semilunate fleshy fin on each side. Mantle free all round, cartilage on the inner side of the ventral surface linear.

Eyes covered with the skin, with a lower eyelid. Buccal membrane without cups.

Arms. Sessile arms triangular, tapering; cups numerous, equidistant, very small, slightly pediceled in six longitudinal series. Tentacular arms elongate, peduncled, cylindrical; club ——— ?

Siphuncle conical, with an apical valve.

Shell internal, shelly, spiral, placed symmetrically at the hinder part of the body, the last chamber being in the central line of the back; chambered, the chambers furnished with a siphon, the last chamber only large enough to contain a very small part of the animal.

Spirulidæ *Owen, Trans. Zool. Soc.* ii. 1836; *D'Orb. Moll. Viv. et Fos.* i. 160. 306. 1845.
Lituidæ *Gray, Proc. Zool. Soc.* 1847, 206.
Spirularia (pars) *Rafin. Anal. Nat.* 141. 1815.
Sepiacea (pars) *Desh. Ency. Méth.* iii.
Sepiadæ (pars) *Geinitz, Grund der Verst.* 261. 1845.
Spiriformia *Bronn, Gesch. de Nat.* iii. 535.

Synopsis of Genera.

A. *Shell thin, apex not coated.*

1. LITUUS.

B. *Shell apex enveloped in a thickened laminar Coat, more or less produced behind.*

2. SPIRULIROSTRA. Apex of shell spinal.

3. BELOPTERA. Apex of shell nearly straight.

Munster has given a genus under the name of *Corniculina*, type *C. Ehrenbergi* but it wants further examination; see *Bronn, Gesch. der Nat.* iii. 535. 339.

A. *Shell thin; apex hooked, not enveloped in a thickened laminar Coat.* — Recent.

1. LITUUS.

Body oblong, rather compressed. Mantle free, upper end truncated, with a projection of the margin on the middle of the back, and one on each side of the siphuncle on the ventral side. Fins two, small, caudal on the side of the extremity of the back. End of the body sometimes furnished with a central, rounded, thickened belt, with a central rounded cavity. — *Head* rather compressed; eyes large, covered with the skin. — Sessile *arms* triangular, tapering, rounded externally; cups numerous, equidistant, very small, slightly pediceled, in six longitudinal series; rings entire, or very minute, denticulated; third and fourth shortly webbed, the rest free. Tentacular arms elongated, cylindrical; club ———— ?. — *Siphuncle* with an apical valve. — *Shell* calcareous, cylindrical, conical, tapering, involute on the same plane, the whorls separate from each other, chambered. Septa concave outwards, with a shelly funnel-shaped siphon on the inner or most curved side, traversing each cell without communicating with each other. Last chamber rather the largest; the nucleus, or first-formed chamber, roundish, swollen, embedded, placed symmetrically, the larger portion being on the hinder part of the centre of the back, and the smaller whorls below on the hinder part of the ventral surface, covered on the sides by the flesh of the body, and above and below by a thin skin.

Péron and Lamarck represent the shell as partly exposed at the end of the body, and this agrees with the imperfect specimen brought home by Captain Belcher, and described by Mr. Owen. Mr. Cranch's fragment, that described by M. De Blainville, and the nearly perfect specimens brought home by Mr. Earl, first figured by Mrs. Gray in the *Annals*, have the shell entirely enclosed, and the hinder part of the body furnished with a thick ring-like fleshy substance, pierced in the centre, and having a slight semicir-

cular kind of fin on each side. It has been suggested that this may depend on the sex of the specimens. De Blainville's specimen was a female, but the sex of the others is unknown.

Lituus *Brown, Jam.* 1756; *Humph. MS.* 1797.
Ammonia *Gualtieri*, 1742; *Breyn, Polyth.* 17 .
Pedum *Humph. Mus. Calon.* 1797, not Lam.
Spirula *Lamck. Syst.* 1801, *Hist.* ed. 2. xi. 280.; *Blainv. Anal. Franç. et étrang. Anal. et Phys.* i. 369. t. 1837; *Gray, Ann. and Mag. N. Hist.* xv. 257. 234. 445. t.; *D'Orb. Moll. Viv. et Fos.* i. 314.; *Owen, Zool. H. M. S. Samarang*, 1848.
Spirula *a. Blainv. Malac.* 1825; not *b* and *c*.
Spirulæa *Péron & LeSueur.*
Cornu Ammonis *Rumph.*
Nautilus sp. *Lister*, 1685.

The following names have been applied to the *Shells* of this genus, but it is impossible to determine to which of the species (if they are distinct) the names belong: —

Nautilus exiguus *Lister, Hist. sive Syn.* lib. iv. t. 550. f. 2.
Cornu Ammonis *Rumph. Thesaur.* t. 20. n. 1.
Cornu Hammonis legitimus *Klein, Ostrac.* 5. sp. 1. t. 1. n. 6.
Cornu Hammonis *Gève, Monat. Belust. ou Essais Verest.* t. 3. f. 8.; *Martini, Conch. Cab.* i. 274. t. 18. f. 1.
Lituus minor *Brown, Nat. Hist. Jamaica*, 398.
Nautilus spirula *Linné, Syst. Nat.* 1767; *Schrœter, Einleitung*, i. 13.; *Gmel. Syst. Nat.* 3371. n. 9.; *Schreber, Versuch.* i. 1.; *Burrow, Elements of Conchol.* t. 12. f. 3.
Spirula fragilis *Lamck. Syst. des An. s. Vert.* 102.; *Bosc, Hist. Nat. des Coq.* v. t. 52. f. 2, 3.; *Roissy, Buff. de Sonnin.* v. 15.; *Montfort, Conch. Syst.* 99.; *Schumach. Vers. test.* 256.; *D'Orb. Moll. des Antilles*, i. 64. n. 16., *Moll. Viv. et Fos.* i. 315. t. 16.
Spirula australis *Johnst. Edin. Journ.* April, 1828, p. 74.
Spirula Peronii *Lamarck. Hist. An. s. Vert.* vii. 601. n. 1.; *D'Orb. Tab. des Céph.* 68., *Moll. des Canaries*, 24. n. 8.; *Blainville, Faune Franç.* 22. t. 3. B. f. 1.; *Sowerby, Genera of Shells; Blainv. Nouv. An. du Mus.* iii. 18. t. 1.; *Cuvier, Règne Anim.* t. 8. f. 1.; *Potiez et Mich. Gall. des Moll.* i. 9. n. 1.; *Reeve, Conch. Syst.* ii. 296. t. 298.

* *The posterior Part of the Body without any ring, and the last Whorls of the Shell exposed.— Males?* — Spirula.

1. Lituus prototypus.

Spirula prototypus *Péron, Voy. Terres Austral.* t. 30. f. 4. 1840, cop. *Gray, Ann. N. H.* xv. t. 15. f. 7.; *D'Orb. Moll. Viv. et Fos.* t. 16. 2.; *Blainville, Man.* t. . f. .; cop. *Gray*, l. c. t. 15. f. 6.

Spirula australis *Lamck. Ency. Méth.* t. 465. f. 5. 18— ?, cop. *Gray*, l. c. xv. t. 15. f. 5.; *D'Orb. Moll. Viv. et Fos.* t. 16. f. 1.
Spirula Peronii *Lamck. Hist. Anim. s. V.* vii. 601.?; *Owen*, in *Adams, Zool. Voy. Samarang, Moll.* 13. 15. t. 4. f. 1. 4, 5, 6, 7. 11, 12, 13, 14, 15.

Hab. Australia?

** *The posterior Part of the Body furnished with a circular Disk, covering and concealing the Shell, and with semicircular Fin-like appendages on each Side.* — Lituus.

2. Lituus lævis.

Mantle smooth.

Spirula ——— ? *Gray, Ann. Nat. Hist.* xv. 257. f. 5. f. 1. 234. 445.
Spirula Peronii? *Reeve, Elem. Conch.* 16. t. A. f. a. d. not good (not *Lamck.*).
Spirula australis *Owen*, in *Adams, Zool. Voy. Samarang, Mollusca*, 13. t. 4. f. 2. 8. 1848, not Lamck.

Hab. New Zealand. Mus. Mr. Cuming.

3. Lituus vulgaris.

Mantle pitted with close-set angular depressions, giving it a well-marked, reticulated character; disk and appendages smooth.

Spirula vulgaris *Leach, MS.* 1817; *Leach, Tuckey, Voy. Zaire*, append.
Spirula ——— ? *Blainville, Ann. Franç. et étrang. Anal. Phys.* i. 369. t. ? 1837, cop. *Zool. Voy. Samarang, Moll.* t. 4. f. 15*? cop. *D'Orb. Moll. Viv. et Fos.* t. 16. f. 3. 12.
Spirula reticulata *Owen*, in *Adams, Zool. Voy. Samarang, Moll.* 13. t. 4. f. 3. 9, 10.

Hab. Timor.

a. Africa. Skin of the body and shell. In spirits. Presented by J. Cranch, Esq., Congo Expedition.

B. *Shell apex enveloped in a thickened laminal Coat, produced behind.* — Fossil.

2. SPIRULIROSTRA.

Animal ——— ? only known fossil. — *Shell* calcareous, involute on the same plane, the whole separate from each other, chambered. Septa transverse, concave, with a siphon on the inner or arched side. Shelly case covering the whole of the

shell, rather produced on each side in front, and produced behind into an acute conical tail, leaving a small concavity over the tip in front of the arch of the whorls.

Spirulirostra *D'Orb. Ann. Sci. Nat.* xvii. 362. t. 11. f. 16. 1842, *Moll. Viv. et Fos.* i. 312.; *Desh.* in *Lamck. Hist.* xi. 248.

1. SPIRULIROSTRA BELLARDII.

Spirulirostra Bellardii *D'Orb. Ann. Sci. Nat.* xvii. 302. t. 11. f. 16., *Moll. Viv. et Fos.* i. 312. t. 15.

Fos. Middle Tertiary, Turin.

3. BELOPTERA.

Animal ——————? only known fossil. — *Shell* calcareous, conical, straight, or slightly curved, chambered; chambers pierced, with a siphon on the ——? edge. Enveloping case elongate, subcylindrical in front, and sometimes winged on the sides, ending in a blunt beak at the hinder end.

Fos. Lower Tertiary formations.

Beloptera *Deshayes, MS, Ency. Méth.* ii. 135. 1830, in *Lamck. Hist.* xi. 243.; *Desh. MS.* in *Blainv. Malac. Supp.* 621. t. 11. f. 8. 1825, *Mém. Belemn.* 3. f. 3. 1827; *Sow. Min. Fos.* t. 591.; *D'Orb. et Féruss. Céphal. Acét.* t. 3. f. 7. 9. t. 21. f. 11, 12. 1839, *Moll. Viv. et Fos.* i. 308.

Sepia species *D'Orb. & Féruss. Tab. Méth. Céph.* 67. 1825.

Sepia (subgenus) *Gray, Proc. Zool. Soc.* 1847, 205.

* *Lateral Expansions distinct.*

1. BELOPTERA BELEMNITOÏDEA.

Shell oval, oblong, curved, expanded on the sides; above convex, beneath concave; beak blunt, straight.

Beloptera belemnitoïdea *Blainv. Malac. Supp.* 621. t. 11. f. 8. 1825; *Dal. Sci. Nat.* xl. viii. 290. t. 20. f. 8.; *Desh. E. M.* ii. 135., *Fos. Paris*, 762. t. c. f. 4, 5, 6.; *D'Orb. Moll. Viv. et Fos.* i. 808. t. 14. f. 1. 4.

Beloptere Deshayes *Blainv. Belemn.* t. 1. f. 3.

Sepia Parisiensis *D'Orb. & Féruss. Tab. Céph.* 67. 1825, *Ann. Sci. Nat.* ii. 482. vii. 57.

Beloptera Parisiensis *D'Orb. Gray, P. Z. Soc.* 1847, 205.

Dent de Poisson *Guet. Mém.* v. t. 2. f. 11, 12.

Beloptera Belemnoidea *Blainv.*

Fos. Paris Basin.

a. Adult, with large wing-like expansion and deep cavity. Paris. Presented by J. E. Gray, Esq.

b. Broken, or young? Wings very slightly expanded, very thin, and cavity very small, shallow. Paris. Presented by J. E. Gray, Esq.

** *Lateral Expansion none.*

2. BELOPTERA LEVESQUEI.

Shell oblong, elongate, arched, narrow, cylindrical; three-keeled in front; beaked, blunt, and striated behind.

Beloptera Levesquei *D'Orb. et Féruss. Céph. Acét.* t. 20. f. 10. 12.; *D'Orb. Moll. Viv. et Fos.* i. 307. t. 11. f. 5. 7.

Fos. Paris Basin.

3. BELOPTERA ANOMALA.

Shell oblong, elongate, depressed, arched, concave, with two diverged ridges above, behind blunt.

Beloptera anomala *Sow. Min. Conch.* vi. 184. t. 591. f. 2. 1828; *D'Orb. Moll. Viv. et Fos.* i. 309. t. 14. f. 8. 10.

Fos. London Clay.

FAM. VIII. BELEMNITIDÆ.

Animal elongated ——— ? only known fossil.

Shell internal, (horny or) calcareous; the apex conical, chambered. Chambers concave, simple, pierced with a marginal siphon on the ventral side; sometimes covered externally with concentric layers, forming a more or less elongate, subcylindrical, conical *style*.

Belemnitidæ *Owen, Trans. Zool. Soc.* ii. 1836; *D'Orb. Moll. Viv. et Fos.* i. 443. 1845.
Onychoteuthidæ (pars) *Gray, P. Z. Soc.* 1847, 206.
Cephalopodes polythalmes (pars) *Lamck. Hist.* ed. 2. xi. 268.
Belemnomorpha *Bronn, Gesch. der Nat.* iii. 536.

Synopsis of the Genera.

A. *Shell conical, naked, not covered with any externally deposited Coat.*

1. CONOTEUTHIS. Shell with strong longitudinal keel on the middle of the back.

B. *Shell conical, covered with an externally deposited Coat, forming a more or less elongated cylindrical Style.*

a. *External Coat thin.*

2. BELEMNOTEUTHIS.

b. *External Coat forming an elongate Style.*

3. ACTINOCAMAX. The conical cavity in the style with an elongated longitudinal fissure on the lower side.

4. BELEMNITES. The conical cavity in the style with an entire edge and no longitudinal figure.

A. *Shell conical, thin, naked, not covered with any externally deposited Coat; probably produced behind into a long, slender, dorsal plate.*

1. CONOTEUTHIS.

Animal ———— ? — *Shell.* Cone broad, rapidly enlarging, thin, horny, smooth, marked with very slight rather oblique concentric lines of growth, not covered with any externally deposited calcareous coat, with a well marked strong longitudinal keel on the middle of the back (probably produced into a slender elongated dorsal style). Septa transverse smooth.

Conoteuthis *D'Orb. An. Sci. Nat.* xvii. t. 12. f. 1. 5. 1842, *Paléont. univ.* t. 30., *Paléont. Franç.* t. 1. supp., *Moll. Viv. et Fos.* i. 444. t. 32.; *Desh.* in *Lamck. Hist.* 240.

1. CONOTEUTHIS DUPINIANUS.

Conoteuthis Dupinianus *D'Orb. An. Sci. Nat.* xvii. t. 12. f. 1. 5., *Paléont. univ.* t. 30., *Moll. Viv. et Fos.* i. 444. t. 32.

Fos. Paris Basin.

B. *Shell conical, thin, covered with a more or less thick externally deposited Coat.*

a. *Outer Coat thin, merely covering the Shell.*

2. BELEMNOTEUTHIS.

Animal elongate, subcylindrical. Fins lateral, rounded. Arms, sessile and peduncled, armed with two series of hooks (and round cups?). — *Shell* internal, conical, thin, elongate, subcylindrical; apex conical, chambered; septa concave, even edged. Siphon near the edge of the septa, the conical upper part covered ex-

ternally with a thin externally deposited coat, which becomes thinner above the apex; apex with two ridges on each side, those of one surface ("the dorsal," *Mantell*) parallel, and the other (ventral ?) rather diverging above.

Belemnoteuthis *Pearce, Proc. Geol. Soc.* 1842, ii. 593., *Annal. Nat. Hist.* 1842, ix. 578.

Belemniteuthis *Gray, Proc. Zool. Soc.* 1847, 206.; *Cunnington, London Geol. Jour.* i. 1847, 98, 99. t. 15. 16.; *Mantell, Phil. Trans.* 1848, 173.

Belemnite (animal and phragmocone) *Owen, Phil. Trans,* 1844, 65.; *D'Orbigny, Moll. Viv. et Fos.* i. t. 28. from Owen.

Dr. Mantell, in his restoration of this genus (*Phil. Trans.* 1848, t. 14. f. 3, 4.), seems to have overlooked the fact that the upper part of the shell appears, as figured by Messrs. Owen and Cunnington, to be subcylindrical, like the upper part of the cone of the Belemnites.

1. BELEMNOTEUTHIS ANTIQUUS.

Belemnoteuthis *Pearce, Proc. Geol. Soc.* 1842, ii. 593., *Ann. Nat. Hist.* 1842.

Belemnoteuthis antiquus *Cunnington, Lond. Geol. Jour.* 98, 99. t. 15, 16.; *Mantell, Phil. Trans.* 1848, 175. t. 13. f. 2, 3. 5. t. 14. f. 1. ? 3, 4. t. 15. f. 5.

Belemnites Owenii (pars) *Pratt, MS.; Owen, Trans. Roy. Soc.* 1844, 83. t. 2, f. 6, 7, 8. (not t. 5.) t. 3. t. 4. f. 1. t. 5. t. 6. t. 7. f. 4.

Belemnosepia de Chippenham *Chenu, Leçon Elém. H. N.* 238. f. 760. 1847, from Owen.

Belemnites Puzozianus (pars) *D'Orb. Moll. Viv. et Fos.* i. 519. t. 28. from Owen (t. 29, 30. theoretical).

Fos. Oxford Clay, Wiltshire.

a. Fossil. The cone and the upper part of the shell with remains of animal. Wiltshire. From Mr. Rich's Collection.

b, c. The lower part of the shell only. Wiltshire.

b. *Outer Coat produced, forming a subcylindrical external style.*

3. ACTINOCAMAX.

Animal unknown.—*Cone* ————?; the externally deposited style with an elongated longitudinal fissure in the lower side of the conical cavity.

Actinocamax *Müller, Trans. Zool. Soc.* ii. 64. 1823; *Voltz, Belemn.* 35. 1830; *Blainv. Belemn.* 34. 1827.
Belemnitella *D'Orb. Bull. Soc. Géol.* 1841, *Paléont. univ.* 1846, *Moll. Viv. et Fos.* i. 447.
Act..inocamax (pars) *Voltz, Ann. Sci. Nat.* xiii. 354. 1840.
Belemnites *Breyn. Polyth.* 41. 1732; *Lamck. Syst. An. s. V.* 104. 1801, (B. paxillosa); *Montf. C. Syst.* 383. 1808.
Belemnites (pars) *Lamck. Hist.* 16.
Echinus (spine) *Beudant, Ann. Mus.* xvi. 1810.

1. ACTINOCAMAX VERUS.

Style elongate, lanceolate, smooth; trigonal in front; dilated, depressed, and mucronately acuminated behind; sides with a deep impressed groove, evanescent behind. Shell truncated, radiately ribbed, slit below.

Actinocamax verus *Müller, Trans. Géol. Soc.* ii. 64. t. 9. f. 17. 1823; *Voltz, Lehrb.* 1839, 522.
Belemnites fusiformis *Young, Geol. York*, 14. t. 14. f. 2.? 1822.
B. plenus *Blainv. Belem.* 59. n. 1 1827, *Dict. Sci. Nat.* f. 3.; *Desh. Ency.* ii. 124.; *Bronn, Lethæa*, ii. t. 83. f. 14.; *Roemer, Kreid.* 34.
B. mucronatus (pars) *Sonn. Mem. Conch.* vi. 205. t. 600. f. 6, 7. 1829.
B. lanceolatus *Son. Mem. Conch.* v. 208. t. 600. f. 8, 9. 1829, not Schloth; *Pusch, Pol. Paléon.* 162.; *Morris, Cat.* 177.
Belemnitella vera *D'Orb. Bull. Géolog.* 1842, 359., *Paléont. univ.* t 32. f. 1—6. 1846, *Moll. Viv. et Fos.* 447.
Actinocamax Blainvillei *Voltz, Belem.* 35. 1830.
Belemnitella Galliennei *D'Orb. Bull. Soc. Géol. F.* 1842; *Brey. Polyth.* 411. t. 7. f. 15. 1732.
Echinus spine *Beudant, Ann. Mus.* xvi. t. 3. f. 8, 9, 1810; *Park. Org. Rem*, iii. t. 4. f. 19. 1811.

Fos. Greensand.

a, b, c, d. Style only. Folkstone. Presented by J. E. Gray, Esq.

2. ACTINOCAMAX PAXILLOSA.

Style elongate, subconical, rugose, cylindrical, and slit in front, with ramulose flattened grooves on the sides, many-branched behind; mucronately acuminated behind. Shell raised; angle 19″ or 20″.

Belemnites *Breyn. Polyth.* 41. t. 7. f. 1—14.; *Klein, Tab. Mar.* 30. t. 7. f. 3, 4, 5.
Belemnites *Faujas St. Pierre*, 127. t. 32. f. 3.
Belemnites paxillosa *Lamck. Syst. A. s. V.* 104. 1801.

B. paxillosus *Montf. Conch. Syst.* i. 383. 1808; *Park. Org. Rem.* iii. 9. f. 1.; *Schloth. Tasch.* vii. 31. 70. 100, 101. (part).
B. mucronatus *Schloth. Tasch.* vii. 3. 1813, *Petref.* 47.; *Mantell, Fos. S. D.* t. 16. f. 1.; *Brong. et Cuv. Géol. Par.* t. 3. f. 1. a, b; *Nelson, Act. Holm.* 1825, 339., *Petref. Suec.* 9. t. 2. f. 1—4.; *Blainv. Belemn.* 7. t. 1. f. 12*.; *Sonn. Mem. Conch.* t. 600. f. 1, 2. 4.; *Desh. E. M.* ii. 125.; *Cuv. Règ. Ann. Ill.* t. 11. f. 3.
B. cylindrus *Wahlenb.* 1821.
? B. coniformis *Park. Org. Rem.* iii. 127. 132. t. 8. f. 10. 12. t. 9. f. 1. 1811.
B. subconicus *Lamck. Hist.* vii. 592. 1822 (part).
B. fusoïdes *Lamck. Hist.* vii. 1822.
B. electrinus *Miller, Belemn.* 61. t. 8. f. 2.
B. Osterfieldi *Blainv. Belemn.* 62. t. 1. f. 8.
B. Allani *Flem. B. A.* 240. 1828.
B. americanus *Morton, Amer. Jour.* xvii. 281. xviii. t. 1. f. 1. 3.; *Keferst.* 1834, 422.
Belemnitella mucronata *D'Orb. Paléont. Fran. Ter. Cret.* t. 7.; *Murchison, Russia,* 489. t. 43. f. 1—4., *Moll. Viv. et Fos.* i. 450. t. 33. f. 1—6.
? Belemnites ambiguus *Morton, Silliman, Jour.* xviii. t. 1. f. 4. cop.
? Belemnitella ambigua *D'Orb. Paléont. étrang.* t. 27. f. 13, 14., *Moll. Viv. et Fos.* i. 436. t. 33. f. 13, 14. from Morton.

Fos. Chalk.

a, *b*. Style from chalk. Norwich. Presented by Mr. E. Gerrard.
c, *d*. From chalk. Kent. Presented by J. E. Gray, Esq.

3. Actinocamax quadrata.

Shell subquadrate, short. Style elongate, subcylindrical, compressed and fissured in front, acuminated and mucronate behind; lateral groove broad, bifurcate, and branched behind.

Belemnitus quadratus *Defrance Cabinet; Blainv. Belem.* 62. t. 1. f. 9. 1827; *D'Orb. Ter. Cret.* 160. t. 6. f. 5. 10.
B. granulatus *Blainv. Belemn.* 63. t. 1. f. 10. (not Zieten) 1827; *Sow. M. C.* vi. 207. t. 600. f. 3. 5.; *Desh. E. M.* ii. 135.; *Potiez et Mich. Gal. Moll.* i. 22.; *Roemer, Kreid.* 84.; *Morris, Cat.* 177.
B. striatus *Blainv. Belemn.* 64. t. 1. f. 11. (not Hartm.) 1827; *Desh. E. M.* ii. 135.
Belemnitella quadrata *D'Orb. Paléont. univ.* t. 34. f. 510., *Moll. Viv. et Fos.* i. 451.

Fos. White Chalk. France, England.

4. ACTINOCAMAX SUBVENTRICOSA.

Shell conical, concentrically rugose. Style elongate, subcylindrical, smooth, rather trigonal, compressed in front, depressed and mucronate at the tip behind; lateral grooves flattened, simple, evanescent behind.

Belemnites subventricosus *Wahlenb. Act. Upsal.* viii. 80. 1821; *Voltz, Belem.* 64. t. 8. f. 1.

B. mamillatus *Nelson, Act. Holm.* 1825, 340., *Petref. Suec.* 10. t. 2. f. 2.; *Hissing, Lethæa Suec.* 31. t. 10. f. 7.; *Roemer, Kreid.* 84.

B. Scaniæ *Blainv. Belemn.* 61. 1827, *Dict. Sci. Nat.* f. 6.; *Desh. E. M.* ii. 124.

Belemnitella subventricosa *D'Orb. Paléont. univ.* t. 31. f. 7. 12., *Moll. Viv. et Fos.* i. 454. t. 33. f. 7. 12.

Fos. Chalk. Sweden.

4. BELEMNITES.

Shell conical? ————. The externally deposited *style* with an entire margin to the edge of the conical cavity (which covered the shelly cone).

Belemnites *Lister*, 1678; *D'Orb. An. Sci. Nat.* xvii. 1842, *Paléont. Ter. Jur.* 1842, *Moll. Viv. et Fos.* i. 459.

Belemnita *Fleming, Brit. Anim.* 1828.

Belemnites (pars) *Ehrhart, Bel. Suec.* 1727; *Lamck. Hist.* (not Syst. 1801).

Nautilus Belemnita *Gmelin.*

Histolithis *Montf. Conch. Syst.* i. 387. t. 97.

Acamas *Montf. Conch. Syst.* i. 1808.

Acheloïs *Montf. Conch. Syst.* i. 1808.

Callirhoe *Montf. Conch. Syst.* i. 1808.

Celocis *Montf. Conch. Syst.* i. 1808.

Chrysaor *Montf. Conch. Syst.* i. 1808.

Hibolithes *Montf. Conch. Syst.* i. 1808.

Paclites *Montf. Conch. Syst.* i. 1808.

Poradragus *Montf. Conch. Syst.* i. 1808.

Thalamus *Montf. Conch. Syst.* i. 1808.

? Platinites *Rafin.*

Actinocamax (pars) *Voltz, Ann. Sci. Nat.* xiii. 354. 1840, not Müller; *Philips, Hartmann.*

? Pseudobelus *Blainv. Belemn.* 113.

Notosiphites and Gasterosiphites *Duval.*

Ocœli, Notocœli, and Gastrocœli *D'Orb. Paléont. univ., Moll. Viv et Fos.*

Teudopsis sp. *Deslongchamps, Mém. des Soc. Norm.* v. 72. 1838.

Belemnosepia (pars) *Buckland, Geol. et Min.* i. 371. ii. 68. t. 44. f. 1. 7, 12.

Dr. Buckland gives a theoretical figure of the animal of this genus, which appears most consistent with the specimens I have examined (see *Geol. and Mineralogy with Nat. Theology*, ii. 70. t. 44. f. 1. 1836); and figures a Belemnites, with the upper part of the shell preserved (l. c. ii. t. 4. f. 7, 8, 9, 10, 11, 12. 1836).

Dr. Mantell (*Phil. Trans.* 1848, t. 15. *f.* 2. 3.) has figured a specimen which appears to have an elongated process on each side, like the processes on the side of the mouth of certain *Ammonites;* but, on examining the specimen, I am very doubtful if this appearance does not arise from an accidental fracture of the upper part of the conical sheath.

M. D'Orbigny describes the shell of this genus as horny, enlarged in front into a spathuliform dorsal plate, contracted behind, with a conical cavity furnished with concave septa, having a siphon on the ventral edge traversing all the cells, and coated externally with a shelly beak. The theoretical form of the bone is represented by M. D'Orbigny in *Ann. Sci. Nat.* 1842, t. , *Paléont. Franç. Ter. Juras.* t. 2. f. 1, 2. t. 3. f. 1, 2, 3. t. 4. f. 1., *Moll. Viv. et Fos.* i. t. 35, 36. The authority for this dorsal expansion appears to rest on certain lines seen on the outside of the cone of *Belemnites giganteus* var. *aalensis*, which, he thinks, resemble the grooves found on the dorsal surface of the bone of the cuttle-fish, *Sepia* or *Loligo*, and hence he believes they have a similar enlarged dorsal plate. This may be the case with some species, though, I believe, no specimens have been found to establish this theory, and the external surface of the conical part of other Belemnites shows no indication of any such grooves; but this may arise from two or more distinct forms being confounded in the present genus Belemnites.

Synopsis of the Sections of the Genus.

* Without any dorsal or ventral Groove.—Acœli.

† Lateral Lines none.—Acuarii.

†† Lateral Lines two on each Side.—Clavati.

** Ventral Groove distinct.—Gastrocœli *D'Orb.*, Notosiphites *Duval.*

† Lateral Lines none.—Canaliculati.

†† Lateral Lines two on each Side.—Hastati.

3* Dorsal Groove distinct.—Notocœli *D'Orb.*, Gastrosiphites *Duval.*

† Lateral Lines two on each Side.—Dilatati.

Professor Bronn, in forming this table, has, by mistake, transposed the position of the grooves (see *Gesch. der Naturg.* iii. 150.).

* *Without any dorsal or ventral Groove.*—Acœli *Bronn, Gesch. Nat.* iii. 150.

† *Style more or less conical, sometimes grooved or ridged at the lower Extremity, but without any lateral Grooves in Front.*—Acuarii *D'Orb. Ter. Jur.* i. 73., *Moll. Viv. et Fos.* i. 480.; *Bronn*, l. c. 150.

1. BELEMNITES NIGER.

Shell elongate, subcylindrical, subquadrate, posteriorly acuminated, above bisulcate, anteriorly dilated; aperture somewhat square-shaped; alveolus 20°.

Belemnites niger *Lister, Conch. Angl.* t. 7. 31. 226.? 1678; *D'Orb. Paléont. univ.* t. 39. t. 40. f. 1—5., *Moll. Viv. et Fos.* i. 483., *Belemn.* n. 2.

Belemnites coniformis *Parkinson, Organ. Rem.* iii. 127. t. 8. f. 11. 12. 15.? 1811.

Belemnites paxillosus *Schlotheim, Taschenb.* vii. 51. 70. 1813 (not Montf. 1808); *Schloth. Petref.* 46. n. 3.; *Blainville, Belemnites*, 101. n. 43.; *Voltz, Belemn.* 50. t. 6. f. 2. t. 7. f. 2.; *Zieten, Wurt.* 29. t. 23. f. 1.; *Hartmann, Wurt.* 17. n. 1.; *Keferst. Dict. Nat.* 427. n. 68.; *Roemer, Ool.* 171. n. 17.; *Pusch, Polers. Paléont.* 162. n. 5.; *Morris, Brit. Fos.* 177.

Belemnites vulgaris *Young, Geol. Surv. of Yorksh.* 256. t. 14. f. 1, 2. 1822.

Belemnites apicicurvatus *Blainv. Belemn.* 76. n. 16. t. 2. f. 6. 1827; *Zieten, Wurt.* 30. t. 23. f. 4.; *Keferst. Dict. Nat.* 424. n. 14. (1834).

Belemnites apicicurvus *Hartmann, Wurt.* 15. n. 1. 1830.

Belemnites bisulcatus *Blainv. Belemn.* 79. n. 19. t. 2. f. 7. 1827, *Dict.* t. f. 6, 7.; *Hartmann, Zieten, Wurt.* 31. t. 24. f. 2. p. 16. n. 1.; *Desh. Encycl.* ii. 128. n. 12.; *Keferst. Dict. Nat.* 424. n. 19, 20.; *Roemer, Nord. Ool.* 171. n. 18.

Belemnites Crassus *Voltz, Belemn.* 53. n. 10. t. 7. f. 2. 1830; *Zieten, Wurt.* t. 22. f. 1.; *Keferst. Dict. Nat.* 425. n. 31.; *Roemer, Ool.* 174.; *Potiez et Mich. Gal.* i. 22. n. 4.

Belemnites subaduncatus *Zieten, Wurt.* 27. t. 21. f. 4. 1830 (not Voltz); *Voltz, Belemn.* 48. n. 8. t. 3. f. 2. 1830; *Keferst. Dict. Nat.* 428. n. 91.

Belemnites subaduncus *Roemer, Ool.* 170. n. 15. 1835.

Belemnites teres *Sthal. Zieten, Wurt.* 28. t. 21. f. 8. deformed, 1830; *Hehl. Zieten*, t. 21. f. 2.? deformed.

Belemnites carinatus *Hehl. Zieten, Wurt.* 27. t. 21. f. 6. 1830; *Keferst. Dict. Nat.* 425. n. 27.
Belemnites papillatus *Pheninger, Zieten,* 30. t. 23. f. 7. 1830; *Keferst.* 427. n. 69.; *Roemer, Ool.* 169.
Belemnites subpapillatus *Zieten, Wurt.* 30. t. 23. f. 8.? 1830; *Keferst.* 428. n. 95.; *Roemer, Ool.* 169.
Belemnites quadrisulcatus *Hartmann, Ziet.* 31. t. 24. f. 4.? 1830; *Keferst.* 427. n. 78.; *Roemer, Ool.* 175.
Belemnites affinis *Munster, zur Belemn.* 14. t. 2. f. 1. 3. 1830 (not Raspail, 1829); *Keferst.* 424. n. 9.
Belemnites lævigatus *Zieten, Wurt.* 282. t. 21. f. 12.? 1830; *Keferst.* 426. n. 53.; *Roemer, Ool.* 169.
Belemnites turgidus *Schub. Zieten, Wurt.* 28. t. 22. f. 1. 1830.
Belemnites striatulus *Roemer, Nord. Ool.* 165. n. 3.? 1836.
Belemnites impressus *Roemer, Ool.* 170. n. 16. t. 16. f. 5. 1836.
Belemnites Bruguieranus *D'Orb. Paléont. Franç. Terr. Jur.* i. 84. t. 6. t. 7. f. 15. 1842.

Hab. Middle Lias.

2. BELEMNITES IRREGULARIS.

Shell (young) short, compressed, posteriorly obtuse, somewhat sharp-pointed; (adult) very long, compressed, rather conical, posteriorly attenuate, rather obtuse, longitudinally striately grooved; aperture compressed; alveolus at an angle of 20° to 22°.

Belemnites irregularis *Schloth. Min. Tasch.* vii. 70. t. 3. f. 2. 1813, *Die Petref.* 48. n. 5.; *Blainv. Belemn.* 104. n. 46., *Zieten, Wurt.* 30. t. 23. f. 6.; *Hartmann, Wurt.* 16.; *Keferst. Dict. Nat.* 426. n. 52.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 76. t. 5. and 74. t. 4. f. 2—8., *Paléont. univ.* 44. t. 43. f. 9—11., *Moll. Viv. et Fos.* i. 496. n. 13.
Belemnites acuarius *Schloth. Petref.* 46. n. 2. 1820; *Blainv. Belemn.* 96. n. 36.; *Munster, Belemn.* 15. t. 2. f. 5, 6.; *Hartmann, Wurt.* 15.; *Keferst.* 424. n. 4.; *Roemer, Ool.* 174.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 74. t. 7.
Belemnites penicillatus *Schloth. Petref.* n. 10. 1820; *Blainv. Belemn.* 89. n. 29. t. 3. f. 7.; *Sow. Min. Conch.* vi. 181. t. 590. f. 5, 6.?; *Desh. Encycl.* ii. 131. n. 21.; *Hartmann, Wurt.* 17.; *Keferst.* 427. n. 70.
Belemnites tubularis *Young, Geol. Surv. Yorksh.* t. 14. f. 6. 1822; *Phillips, Geol. Yorksh.* t. 12. f. 20.; *Morris, Brit. Foss.* 178.
Belemnites digitalis *Blainv. Belemn.* 88. n. 28. t. 3. f. 5, 6. 1827; *Voltz, Belemn.* 45. n. 7. t. 2. f. 5.; *Zieten, Wurt.* 31. t. 23. f. 9.; *Hartmann, Wurt.* 16.; *Keferst.* 425. n. 35.; *Roemer, Ool.* 167 n. 8.

Pseudobelus striatus *Blainv. Belemn.* 113. t. 4. f. 13. 1827? (not Defr.)
Belemnites striatus *Keferst.* 428. n. 90. 1834.
Pseudobelus lævis *Blainv. Belemn.* 112. t. 4. f. 14.? 1827.
Belemnites lævis *Roemer, Ool.* 115. n. 4.? 1836.
Belemnites gracilis *Hell. Zieten, Wurt.* 28. t. 22. f. 2. 1830 (not Raspail, 1829, nor Phillips); *Keferst.* 426. n. 46.; *Roemer, Ool.* 175.
Belemnites lagenæformis *Hartmann, Zieten, Wurt.* 33. t. 25. f. 1. 1830; *Keferst.* 426. n. 54.
Belemnites pygmæus *Zieten, Wurt.* 28. t. . f. 9.? 1830; *Keferst.* 427. n. 77.
Belemnites rostratus *Zieten, Wurt.* 30. t. 23. f. 5. 1830 (not rostratus *Raspail*, 1829); *Keferst.* 427. n. 83.; *Roemer, Ool.* 175.
Belemnites longisulcatus *Voltz, Mem.* 57. t. 6. f. 1. 1830; *Keferst.* 426. n. 58; *Roemer, Ool.* 174.
Belemnites tenuis *Munst. Belemn.* t. 22. f. 5. 6. 1830; *Hartmann, Wurt.* 17.; *Keferst.* 428. n. 99.; *Roemer, Ool.* 169. n. 13.
Belemnites semistriatus *Munst. Belemn.* t. 2. f. 4. 1830; *Keferst.* 428. n. 88.

Hab. Upper Lias.

3. BELEMNITES TRIPARTITUS.

Shell (young) elongate, slender, compressed, posteriorly attenuately acute, beneath one-grooved; aperture compressed; (adult) shell conical, compressed, posteriorly acuminate, three-grooved, anteriorly dilated; aperture oval, compressed; alveolus at an angle of 22° to 25°.

Belemnites tripartitus *Schloth. Petref.* 48. n. 6. 1820; *Miller, Trans. Geol. Soc.* 1823, 66. t. 8. f. 10—13. (the extremity); *Blainville, Belemn.* 82. n. 21. t. 4. f. 4.; *Hartmann, Wurt.* 17.; *Keferst. Dict. Nat.* 428. n. 104.; *Roemer, Ool.* .; *D'Orb. Paléont. univ.* t. 45. f. 46., *Terr. Jur. Supp.* t. 2., *Moll. Viv. et Fos.* i. 501., *Belemn.* n. 14.
Belemnites elongatus *Miller, Trans. Geol. Soc.* t. 7. f. 6, 7. (1823); *Blainv. Belemn.* 95. n. 34. t. 4. f. 6.; *Sow. Min. Conch.* vi. 178.; *Zieten, Wurt.* 28. t. 22. f. 6.; *Hartmann, Wurt.* 16.; *Keferst.* 435. n. 39.; *Roemer, Ool.* 169.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 90. n. 8. t. 8. f. 6—11.; *Matheson, Catal.* 258. n. 277.; *Morris, Brit. Fos.* 177.
Belemnites aduncatus *Miller*, t. 8. f. 6. deformed, 1823; *Blainv. Belemn.* 77. n. 17. t. 2. f. 6. t. 8. f. 6—11.; *Keferst.* 424. n. 8.
Belemnites trisulcatus *Blainv. Belemn.* 83. n. 22. t. 5. f. 13. the extremity, 1827; *Hartmann, Zieten*, t. 24. f. 3., *Wurt.* 17.; *Keferst.* 428. n. 105.; *Roemer, Ool.* 172. n. 20.

Belemnites ovatus *Blainv. Belemn.* 88. n. 27. t. 3. f. 4.? 1827; *Desh. Encyc. Méth.* ii. 130. n. 20.

Belemnites unisulcatus *Blainv. Belemn.* 81. t. 5. f. 21. young, 1827; *Desh. Encyc.* ii. 129. n. 13.; *Hartman, Zieten, Wurt.* 31. t 24. f. 1., *Wurt.* 17.; *Keferst.* 429. n. 112.; *D'Orb. Paléont. Franç.* i. 88. n. 7. t. 8. f. 1—5.

Belemnites compressus *Phillips, Geol. Yorksh.* t. 12. f. 21.? 1829; *Voltz, Belemn.* 53. t. 11. f. n. 2.; *Roemer, Ool.* 171. n. 19.; *D'Orb. Paléont. Franç. Terr. Jur.* t. 6. f. 3—8.; *Matheson, Catal.* 258. n. 278.

Belemnites trifidus *Voltz, Belemn.* 62. n. 15. t. 7. f. 3. 1830; *Keferst.* 428. n. 403.; *Morris, Brit. Fos.* 177.

Belemnites oxyconus *Hel. Zieten. Wurt.* 27. t. 21. f. 5. 1830; *Keferst.* 427. n. 67.; *Roemer, Ool.* 175.

Belemnites subulá *Desh. Encyc. Méth.* ii. 130. n. 17. 1830.

Belemnites ornithocephalus *Theodori, Roemer, Ool. Nord.* 169. n. 14. 1836.

Plott, Philos. Trans. xii. t. 3. f. 8. 1764.

Hab. Upper Lias.

4. BELEMNITES UMBILICATUS.

Shell elongate, subcylindrical, beneath depressed, posteriorly acuminate, subumbilicated, anteriorly somewhat dilated; aperture roundish; alveolus 19°.

Belemnites umbilicatus *Blainv. Belemn.* 97. n. 37. t. 3. f. 11. 1827; *Desh. Encycl.* 132. n. 23. (1830); *Hartmann, Wurt.* 17. n. 1. 1839; *Keferst. Dict. Nat.* 429. n. 109.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 86. t. 7. f. 6—11., *Moll. Viv. et Fos.* i. 486. *Belemn.* n. 3.

Belemnites clavatus *Blainv. Belemn.* t. 3. f. 12. f. b. c. 1827.

Belemnites subdepressus *Voltz, Mem.* 40. t. 2. f. 1. n. 5. t. 7. f. 4, 5. 1830; *Keferst. Dict. Nat.* 428. n. 93.; *Roemer, Ool.* 166. n. 7.

Belemnites perforatus *Voltz, Belemn.* 63. n. 16. t. 8. f. 2.? 1830; *Keferst. Dict. Nat.* 427. n. 71.

Belemnites ventroplanus *Voltz, Belemn.* 40. n. 4. t. 1. f. 10. 1830; *Keferst. Dict. Nat.* 429. n. 113.; *Roemer, Ool.* 168. n. 10.

Belemnites subclavatus *Zieten, Wurt.* 29. t. 22. f. 5. 1830; *Sthal. Wurt.* 19.; *Keferst.* 428. n. 92.; *Roemer, Ool.* 167. n. 9.

Hab. Middle Lias.

5. BELEMNITES LONGISSIMUS.

Shell very elongate, slender, compressed, anteriorly dilated, posteriorly obtusely acuminated, with one longitudinal rib on the sides; aperture compressed.

Belemnites longissimus *Miller, Trans. Geol. Soc.* ii. 60. t. 8. f. 2, 1823; *Blainv. Belemn.* 95. n. 35. t. 4. f. 7.; *Zieten, Wurt.* 28. t. 21. f. 10, 11.; *Keferst. Dict. Nat.* 426. n. 60.; *Roemer, Ool.* 168.; *Morris, Brit. Fos.* 177.; *D'Orb. Paléont. Franç. Terr. Jur. Suppl.* t. 1. f. 1—7., *Paléont. univ.* t. 43. f. 1—7., *Moll. Viv. et Fos.* i. 490., *Belemn.* n. 6.

Belemnites cylindricus *Blainv. Belemn.* 94. n. 33. t. 3. f. 10. 1827; *Desh. Encycl.* ii. 131. n. 22.; *Hartmann, Wurt.* 16.; *Keferst. Dict. Nat.* 425. n. 33.

Hab. Middle Lias.

6. Belemnites brevis.

Shell short, inflated, rather compressed, posteriorly acuminately pointed, anteriorly dilated; aperture square or compressed; alveolus oblique, at an angle of 28°.

Belemnites brevis *Blainv. Belemn.* 86. n. 26. t. 3. f. 2. (exclus. f. 1.) 1827; *Desh. Encycl.* ii. 131. n. 19.; *Hartmann, Wurt.* 16. n. 1.; *Keferst. Dict. Nat.* 425. n. 24.; *Galeotti, Brab.* 166. n. 13.; *D'Orb. Paléont. univ.* t. 38. f. 1—7., *Moll. Viv. et Fos.* i. 491., *Belemn.* n. 7.

Belemnites abbreviatus *Sow. Min. Conch.* vi. 178. t. 590. f. 9. (exclus. f. 2, 3.) 1828, not Miller; *D'Orb. Paléont. Franç. Terr. Jur.* i. 92. n. 9. t. 9. f. 1—7; *Bronn, Fos. Conch.* 21. t. 2. f. 41, 42.

Belemnites breviformis *Voltz, Mem.* 43. n. 6. t. 2. f. 2, 3, 4. 1830; *Munster, Zieten, Wurt.* 27. t. 21. f. 7.; *Keferst. Dict. Nat.* 425. n. 25.; *Roemer, Ool.* 164. n. 1. t. 16. f. 8.; *Morris, Brit. Fos.* 177.

Belemnites pyramidatus *Schub. Zieten,* 29. t. 22. f. 9.? 1830; *Keferst.* 427. n. 76.

B. pyramidalis *Roemer, Ool.* 169. 172. n. 21.

Belemnites incurvatus *Keferst.* 426. n. 51. 1834.

Belemnites conulus *Munster, Roemer, Nord. Ool.* 165. n. 2.

Belemnites acutus *Potiez & Mich.* 21. n. 1. 1838.

Hab. Upper Lias.

7. Belemnites acutus.

Shell short, conical, rather compressed, posteriorly acuminate; aperture oval; alveolar cavity from 18° to 20°.

Belemnites acutus *Miller, Trans. of Geol. Soc.* ii. t. 8. f. 9. 1823 (not Blainville, 1827); *Sowerby, Min. Conch.* vi. 178. t. 590. f. 7, 8. 10.; *D'Orb.* 1842, *Paléont. Franç. Ter. Jur.* i. 94. n. 10. t. 9. f. 8—14., *Paléont. univ.* t. 38. f. 8—14., *Moll. Viv. et Fos.* t. 36. f. 1—3.; *Morris,* 1843, *Brit. Fos.* 177.

B. brevis *Blainv. Belemn.* 86. n. 26. t. 3. f. 1. exclus. f. 2, 3. 1827.
B. pyramidalis *Munster, Zieten, Wurt.* t. 24. f. 5.?; *Lind.* 1830. 1699, t. 25. f. 1583.?

Hab. Superior Lias. France and England.

8. BELEMNITES CURTUS.

Shell short, conical, compressed, obtuse at apex, two-grooved; aperture triangular; alveolus with an angle of 28°.

Belemnites brevirostris *D'Orb. Paléont. Franç. Terr. Jur.* i. 96. n. 11. t. 10. f. 1—6. 1842 (not brevirostris *Raspail*, 1829).
Belemnites curvus *D'Orb. Paléont. univ.* t. 42. f. 1—6. 1846, *Moll. Viv. et Fos.* i. 495. *Belemn.* n. 11.

Hab. Middle Lias.

9. BELEMNITES FOURNELIANUS.

Shell short, compressed, posteriorly obtuse, laterally impressed; aperture compressed, oblong; alveolus at an angle of 17°.

Belemnites Fournelianus *D'Orb. Paléont. Franç. Terr. Jur.* i. 98. n. 12. t. 10. f. 7. 14., *Paléont. univ.* t. 42. f. 7. 14., *Moll. Viv. et Fos.* i. 489., *Belemn.* n. 5.

Hab. Middle Lias.

10. BELEMNITES NODOTIANUS.

Shell oblong, compressed, anteriorly dilated, posteriorly obtusely mucronate, beneath grooved; aperture compressly square; alveolus 25°.

Belemnites incurvatus *Zieten, Wurtemb.* 29. t. 22. f. 7. 1830 (not incurvatus *Raspail*, 1829); *Keferst. Dict. Nat.* 426. n. 51.; *Roemer, Ool.* 174.
Belemnites nodotianus *D'Orb. Paléont. Franç. Terr. Jur.* i. 98. n. 13. t. 10. f. 15. 20. 1842, *Paléont. univ.* t. 42. f. 15. 20., *Moll. Viv. et Fos.* i. 495., *Belemn.* n. 12.

Hab. Upper Lias.

Fossils in Lower Oolite.

11. BELEMNITES GIGANTEUS.

Shell elongate, compressed, acuminate or somewhat inflated, posteriorly acuminated, laterally grooved, anteriorly dilated; aperture oval; alveolus at angle of from 20° to 23°.

Klein, Descript. Tab. t. 9. f. 314. 1731; *Borguet, Trait. des Petrif.* t. 45. f. 576. 1742; *Knorr, Mon.* iii. iv. 354.; *Parkinson, Org. Rem.* iii. 126–128. t. 8. f. 8.

Belemnites giganteus *Schloth. Min. Taschenb.* vii. 70. 1813, *Petref.* 45. n. 1. 1820; *Hartmann, Wurt.* 16.; *Keferst. Dict. Nat.* 426. n. 46.; *Roemer, Ool.* 174.; *D'Orb. Paléont. Franc. Terr. Jur.* i. 112. t. 14, 15., *Paléont. univ.* t. 47, 48., *Moll. Viv. et Fos.* i. 504., *Belemn.* n. 15. (t. 35, 36. theoretical restoration).

Belemnites ellipticus *Miller, Trans. Geol. Soc.* ii. t. 8. f. 14–17. 1823; *Blainv. Belemn.* 102. n. 44.; *Keferst.* 425. n. 38.; *Roemer, Ool.* 174.; *Morris, Brit. Fos.* 177.

Belemnites abbreviatus *Miller, Trans. Geol. Soc.* 59. t. 8. f. 9, 10. young, 1823; *Blainv. Belemn.* 91. n. 31. t. 4. f. 5.; *Sow. Min. Conch.* vi. 179. t. 590. f. 2, 3. (exclus. f. 9.); *Keferst.* 424. n. 2.

Belemnites compressus *Blainv. Belemn.* 84. n. 24. t. 9. 1827; *Sow. Min. Conch.* vi. 692. t. 590. f. 4.; *Desh. Ency.* ii. 129. n. 15.; *Zieten, Wurt.* 26. t. 20. f. 2.; *Hartmann, Wurt.* 16.; *Keferst.* 426. n. 29.

Belemnites quinquesulcatus *Blainv. Belemn.* 83. n. 22. t. 2. f. 8. young female, 1827; *Phillips, Geol. Yorksh.* t. 9. f. 35.; *Zieten, Wurt.* 26. t. 20. f. 3.; *Hartm. Wurt.* 17.; *Keferst.* 427. n. 81.; *Roemer, Ool.* 173. n. 22.; *Morris, Brit. Fos.* 177.

Belemnites gladius *Blainv. Belemn.* 86. n. 25. t. 2. f. 10., *Dict. Sc. Nat.* f. 10. 1827; *Desh. Encyc.* ii. 136. n. 18. 1830; *Keferst.* 426. n. 84.; *Roemer, Ool.* 174.

Belemnites gigas *Blainv. Belemn.* 91. n. 32. t. 5. f. 20. (exclus. t. 8. f. 9.) 1827.

Belemnites aalensis *Voltz, Mem.* 60. t. 4. and 7. i. f. 7. 1830; *Zieten, Wurt.* 25. t. 24. f. 6.; *Keferst. Dict. Nat.* 423. n. 1.; *Roemer*, 174. n. 24.; *Morris, Brit. Fos.* 177.

Belemnites longus *Voltz, Mem.* 58. n. 13. t. 3. f. 1. 1830; *Keferst.* 426. n. 59.; *Roemer, Ool.* 174.

Belemnites grandis *Schubl. Zieten, Wurt.* 26. t. 20. f. 1. 1830; *Keferst.* 426. n. 48.; *Roemer, Ool.* 174.

Belemnites acuminatus *Schubl. Zieten, Wurt.* t. 26.? t. 20. f. 5. 1830; *Keferst.* 424. n. 5.; *Roemer, Ool.* 175.

Belemnites bipartitus *Hartmann, Zieten, Wurt.* 32.? t. 14. f. 7. 1830 (not *Blainv.* 1827); *Hartm. Wurt.* 16.; *Keferst.* 424. n. 18.

Belemnites bicanaliculatus *Hartm. Zieten, Wurt.* 32.? t. 24. f. 9. 1830 (not Blainv. 1827), *Hartm. Wurt.* 15.; *Keferst.* 424. n. 17.

Belemnites quinquecanaliculatus *Hartm. Zieten, Wurt.* 32.? t. 24. f. 12. 1830; *Keferst.* 427. n. 81.

Belemnites Milleri *Desh. Encyc.* ii. 129. 1830.

Belemnites anomalus *Roemer, Ool.* 173. n. 23.? 1836.

Hab. Lower Oolite.

Fossils in Oxford Clay.

12. BELEMNITES EXCENTRALIS.

Shell short, inflated, laterally impressed, rather square-shaped, posteriorly sharply curved, anteriorly dilated; aperture somewhat square; alveolus at an angle of 19°.

Belemnites excentralis *Young, Geol. Yorksh.* t. 14. f. 4, 5. 1822; *D'Orb. Paléont. univ.* t. 57., *Moll. Viv. et Fos.* i. 520. n. 25.
Belemnites excentricus *Blainv. Belemn.* 90. n. 30. t. 3. f. 8. 1827; *Keferst. Dict. Nat.* 425. n. 40.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 120. n. 26. t. 17.
Belemnites abbreviatus *Morris, Brit. Fos.* 127. (in part) 1843.
Belemnites inæqualis *Roemer, Ool.* 166. n. 5. t. 12. f. 1. 1836.
Belemnites lævis *Roemer, Ool.* 165. n. 1.

Hab. Lower, Middle, and Upper Oxford Clay.

13. BELEMNITES PUZOZIANUS.

Shell elongate, cylindrical, compressed, posteriorly straightly acuminate, beneath rather compressly grooved; aperture compressed, rather square; alveolus at an angle of 16½°.

Belemnites Puzozianus (pars) *D'Orb. Paléont. Franç. Terr. Jur.* i. 118. t. 16. f. 1—6. 1842, *Paléont. univ.* t. 50. f. 9. t. 55. f. 1—6. t. 56., *Paléont. étrang.* t. 31., *Paleont. Franç. Terr. Jur. Supp.* t. 3. f. 9., *Moll. Viv. et Fos.* i. 519.
Belemnites Owenii *Pratt, Owen, Phil. Trans.* 1844, t. 2. f. 1—4. (not animal and phragmacone).
B. attenuatus *Mantell, Phil. Trans.* 1848, t. 15. f. 2, 3.

Hab. Lower and Middle Oxford Clay.

a, b. Fossil large, with part of the cone of the shell. Oxford Clay, Wiltshire.
c, d. Small, with part of the cone of the shell. Oxford Clay, Wiltshire.
e. Style only. Oxford Clay, Wiltshire.

14. BELEMNITES MAGNIFICUS.

Shell elongate, cylindrical, depressed, acuminate; beneath flat, posteriorly narrowly channeled; aperture rather square; alveolus 27½°.

Belemnites magnificus *D'Orb. Murch. Vern. and Keys. Russia,* ii. 425. n. 7. 1846; *D'Orb. Paléont. univ.* t. 59. f. 4—8., *Paléont. étrang.* t. 33. f. 4—8., *Moll. Viv. et Fos.* i. 524., *Belemn.* n. 28.

Hab. Lower Oxford Clay.

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15. Belemnites Panderianus.

Shell short, rather conical, laterally compressed; posteriorly beneath impressed, acuminate; aperture compressed; alveolus 22°.

Belemnites aalensis *Fischer, Oryct. Genv. Moscow*, 173. t. 49. f. 1.? 1837 (not Voltz).

Belemnites excentricus *Fischer, Revue des Fos. de Mosc.* n. 5.? 1843 (not Blainv.).

Belemnites Panderianus *D'Orb. Murch. and Vern. Russia*, 423. n. 6. t. 30. 1844, *Paléont. univ.* t. 61., *Paléont. étrang.* 35., *Moll. Viv. et Fos.* i. 527., *Belemn.* n. 30.

Hab. Oxford Clay. Banks of the Volga.

16. Belemnites Russiensis.

Shell dilated, depressly conical, posteriorly longitudinally sulcated, groove short, disappearing; aperture depressed; alveolus at an angle of 20 degrees.

Belemnites Russiensis *D'Orb. Murch. Vern. and Keys. Russia*, ii. 422. n. 4. t. 29. f. 10—16. 1844; *D'Orb. Paléont. univ.* t. 62. f. 1—6., *Paléont. étrang.* t. 36. f. 1—7., *Moll. Viv. et Fos.* i. 529. n. 31.

Hab. Oxford Clay, Russia. Rare.

17. Belemnites Kirghisensis.

Shell elongately conical, somewhat square, beneath depressed, posteriorly longitudinally grooved; groove short, disappearing; aperture square; alveolus with an angle of 20 degrees.

Belemnites Kirghiensis *D'Orb. Murch. Vern. and Keys. Russia*, ii. 423. n. 5. t. 29. f. 17—21. 1844; *D'Orb. Paléont. univ.* t. 62. f. 8—11., *Paléont. étrang.* t. 36. f. 8—11., *Moll. Viv. et Fos.* i. 529. n. 32.

Hab. Russia. Very rare.

18. Belemnites borealis.

Shell elongate, rather spindle-shaped, anteriorly and posteriorly oval, compressed, impressed on the sides; aperture oval.

Belemnites borealis *D'Orb. Murch. Vern. and Keys. Russia*, ii. 420. n. 2. t. 28. f. 15—22. 1844; *D'Orb. Paléont. univ.* t. 62. f. 12—18., *Paléont. étrang.* t. 36. f. 12—18., *Moll. Viv. et Fos.* i. 530. n. 33.

Hab. Oxford Clay. Banks of the Volga.

Fossils in Kimmeridge Clay.

19. BELEMNITES SONICHII.

Shell elongate, somewhat lanceolate, depressed, posteriorly acuminated, beneath flattened; aperture depressed, rather triangular; alveolus ——— ?

Belemnites Sonichii *D'Orb. Paléont. Franç. Terr. Jur.* i. 133. n. 34. t. 22. f. 4—8., *Paléont. univ.* t. 64. f. 4—8., *Moll. Viv. et Fos.* i. 536. n. 39.

Hab. Portland Oolite.

Fossils in Greensand.

20. BELEMNITES SUBQUADRATUS.

Shell elongate, subcylindrical, smooth, anteriorly rather square, posteriorly rather depressed, inferiorly flatly depressed, apex somewhat acute.

Belemnites subquadratus *Roemer, Nord. Ool.* 166. t. 16. f. 6. 1836, *Nord. Kreidegeb.* 83. n. 1.; *Geinitz, Charak.* 68., *Charak. Kreid.* 68.; *D'Orb. Paléont. univ.* t. 71. f. 1—4., *Terr. Cret. Sup.* t. 6. f. 1—4., *Moll. Viv. et Fos.* i. 543. n. 45.

Belemnites Cornelianus *D'Orb. Terr. Cret.* i. 618. 1842.

Hab. (Etage Néocomien.)

†† *Style elongate, often clubbed, and with lateral Grooves.*—Fossils in Lias. Clavati *D'Orb. Moll. Viv. et Fos.* i. 481.; *Bronn*, l. c. 150.

21. BELEMNITES CLAVATUS.

Shell very elongate, club-shaped, anteriorly dilated, slender in the middle, posteriorly inflated, rather mucronate, laterally bisulcate; aperture compressed; alveolus —— ?

Belemnites clavatus *Blainv. Belemn.* 97. n. 38. t. 3. f. 12. a. b. *Exclus.* f. c. 1827; *Desh. Encycl.* 130. n. 24. 1830; *Hartmann, Wurt.* 16. n. 1.; *Keferst. Dict. Nat.* 425. n. 28.; *Roemer, Ool.* 168. n. 10.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 103. t. 11. f. 10—20., *Paléont. univ.* t. 41. f. 19—23., *Moll. Viv. et Fos.* i. 487., *Belemn.* n. 4. t. 34. f. 4, 5.

Belemnites pistilliformis *Sow. Min. Conch.* 177. t. 589. f. 3. 1828; *Hartmann, Wurt.* 17. n. 1.; *Keferst. Dict. Nat.* 427. n. 69.; *Roemer, Ool.* 168. n. 11.; *Morris, Brit. Fos.* 177.

Belemnites subclavatus *Voltz, Belemn.* t. 1. f. 11. 1830; *Roemer, Ool.* 167. n. 9.

Hab. Middle Lias.

22. Belemnites exilis.

Shell very long, subulate, slender, compressed, one-ribbed on sides, posteriorly sharply acuminate; aperture compressed rather square, angular; alveolus at an angle of 20°.

Belemnites exilis *D'Orb. Paléont. Franç. Terr. Jur. i. 101.* f. 6—12. 1842, *Paléont. univ. t. 41. f. 6—12., Moll. Viv. et* i. 493., *Belemn.* n. 9.

Hab. Upper Lias, very rare.

23. Belemnites Tessonianus.

Shell elongate, slender, posteriorly obtuse, anteriorly dilated, above with two grooves, underneath with three grooves; alveolus oblique, at an angle of 27°.

Belemnites Tessonianus *D'Orb. Paléont. Franç. Terr. Jur. i. 103.* t. 11. f. 13—18. 1842, *Paléont. univ. t. 41. f. 13—18., Moll. Viv. et Fos.* i. 494., *Belemn.* n. 10.

Hab. Upper Lias, not common.

** *Ventral Groove distinct.* — Gastrocœli *D'Orb.* l. c. i. 481.; *Bronn, Gesch. der Naturg.* iii. 150. Notosiphites *Duval, Belem.* 23. 29. 38.; see *D'Orb. Moll. Viv. et Fos.* i. 466.

† *Style elongate, lanceolate, or conical, with a ventral Groove extending the whole length below. Lateral Grooves none.*— Fossils in Lower and Great Oolite. Canaliculati *D'Orb. Moll. Viv. et Fos.* i. 481.; *Bronn*, l. c. 150.

24. Belemnites canaliculatus.

Shell elongate, depressed, cylindrical, posteriorly acuminately obtuse, beneath longitudinally grooved; groove not interrupted, equally impressed; aperture depressed, beneath sinuated; alveolus at an angle of 25°.

Belemnites canaliculatus *Schloth. Petref.* 49. n. 9. 1820; *Hartm. Wurt.* 16:; *Keferst. Dict. Nat.* 425. n. 26.; *Zieten, Wurt.* 21. f. 3.; *Roemer, Ool.* 176. n. 26.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 109. t. 13. f. 1—5., *Paléont. univ.* t. 51. f. 5, 6., *Moll. Viv. et Fos.* i. 510., *Belemn.* n. 18.

Hab. Lower Oolite.

25. Belemnites sulcatus.

Shell elongate, compressed anteriorly, depressed posteriorly, equal, apex obtusely mucronate, grooved beneath; the groove disap-

pearing posteriorly; aperture compressed; alveolus at an angle of 18° to 18½°.

Plott, Hist of Oxford, ii. f. 6.

Belemnites sulcatus *Miller, Trans. Geol. Soc.* ii. 59. t. 8. f. 3, 4. 1823; *Keferst. Dict. Nat.* 428. n. 98.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 105. t. 12. f. 1—8., *Paléont. univ.* t. 49. f. 1—8., *Moll. Viv. et Fos.* i. 508., *Belemn.* n. 16. t. 37. f. 10—14.; *Morris, Brit. Fos.* 117.

Belemnites apiciconus *Blainv. Belemn.* 69. t. 2. f. 2. 1827; *Keferst.* 424. n. 13. a.

Hab. Lower Oolite.

26. Belemnites unicanaliculatus.

Shell elongate, compressed, rather conical, posteriorly sharply obtuse, underneath longitudinally grooved; grooves anteriorly and posteriorly interrupted; aperture compressed, oval; alveolus at an angle of 22°.

Belemnites acutus *Blainv. Belemn.* 69. t. 2. f. 3. 1827 (not Miller, 1823), *Dict. Sci. Nat.* 1827, f. 4.; *Desh. Encyc.* ii. 176. n. 26. 1830; *Zieten, Wurt.* 26. t. 21. f. 1.?; *Keferst. Dict. Nat.* 424. n. 7.; *Mich. et Potiez, Gal.* i. 21. n. 1.

Belemnites Blainvillei *Voltz, Belemn.* 37. t. 1. f. 9. 1830 (not Blainv. Catullo, 1829); *Desh. Encyc. Méth.* ii. 127. n. 10.; *Keferst.* 424. n. 21.; *Roemer, Ool.* 176. n. 27.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 107. t. 12. f. 9—16.

Belemnites unicanaliculatus *Hartm. Zieten, Wurt.* 32. t. 24. f. 8.; *Keferst.* 429. n. 110.; *D'Orb. Paléont. univ.* t. 49. f. 9—16. t. 50. f. 1, 2., *Paléont. Franç. Terr. Jur. Suppl.* t. 3. f. 1, 2., *Moll. Viv. et Fos.* i. 509., *Belemn.* n. 17.

Belemnites sulcatus *Munster.*

Hab. Lower Oolite.

27. Belemnites Bessinus.

Shell elongate, anteriorly compressed, posteriorly depressed, beneath longitudinally grooved; groove posteriorly interrupted; aperture compressed, sinuated beneath; alveolus at an angle of 20°.

Belemnites hastatus *Deslongch. Mém. Soc. Linn. de Norm.* vi. 105. 1. t. f. 4. 1837 (not Blainv.).

Belemnites Bessinus *D'Orb. Paléont. Franç. Terr. Jur.* i. 110. t. 13. f. 7—13. 1842, *Paléont. univ.* t. 51. f. 7—13., *Moll. Viv. et Fos.* i. 511., *Belemn.* 19.

Hab. Lower Oolite.

28. BELEMNITES FLEURIANSUS.

Shell elongate, slender, anteriorly compressed, attenuated, posteriorly depressed, very acute, beneath longitudinally grooved; groove posteriorly and anteriorly not interrupted; aperture compressed; alveolus?

Belemnites Fleuriansus *D'Orb. Paléont. Franç. Terr. Jur.* i. 111. t. 13. f. 14—18., *Paléont. univ.* t. 51. f. 14—18., *Moll. Viv. et Fos.* i. 512., *Belemn.* n. 20.

Hab. Great Oolite, rare.

†† *Style elongate, generally lanceolate, with distinct lateral Grooves for a great part of the length. The ventral Groove is very deep in front.*—Hastati. Hibolithus *Montf. Conch. Syst.* i. 387. t. 97. Porodragus *Montf.* 1808. Actinocamax *Voltz, Hartm.*

Fossils in Lias.

29. BELEMNITES TRICANALICULATUS.

Shell elongate, conical, posteriorly obtuse, longitudinally trisulcate; sulci not interrupted, excavated; aperture triangular; alveolus with an angle of 30°.

Belemnites canaliculatus *Bauhin*, 34.? 1698.

Belemnites tricanaliculatus *Hartmann, Zieten, Wurt.* t. 32. t. 24. f. 10., *Wurt.* 17. n. 1.; *Keferst. Dict. Nat.* 428. n. 102.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 100. n. 14. t. 14. f. 1—5., *Paléont. univ.* t. 41. f. 1—5., *Moll. Viv. et Fos.* i. 492., *Belemn.* n. 8.

Belemnites quadricanaliculatus *Hartmann, Zieten, Wurt.* 32. t. 24. f. 2. 1830, *Wurt.* 17.; *Keferst.* 427. n. 79.

Hab. Upper Lias.

Fossils in Oxford Clay.

30. BELEMNITES HASTATUS.

Shell elongate, slender, spindle-shaped, anteriorly dilated, compressed, posteriorly inflated, depressed, acutely mucronate, beneath grooved; groove disappearing posteriorly, interrupted; aperture rounded; alveolus at an angle of from 11 to 18 .

Bauhin, Hist. Fontes. 34. 1598; *Lloyd, Phil. Trans.* xxv. f. 1705.; *Borguet, Trait. des Petrif.* t. 45. f. 374. 1742; *Longius*, t. 37. f. 3.; *Journal de Phys. An.* ix. t. 1. f. D. E.

Hibolithes hastatus *Montf. Conch. Syst.* 386. 1808.

Porodragus restitutus *Montf. Conch. Syst.* 390. 1808.

Belemnites fusiformis *Parkins, Org. Rem.* iii. 122. t. 8. f. 13. 1811; *Young & Bird, Geol. Yorksh.* t. 14. f. 2.; *Miller, Trans. Geol.*

Soc. ii. 61. t. 7. f. 22. t. 9. f. 5. 7.; *Blainv. Belemn.* 74. n. 14.; *Hartmann, Wurt.* 16.; *Keferst. Dict. Nat.* 426. n. 43.; *Roemer, Ool.* 176. n. 26.; *Pusch, Polens. Paléont.* 162. n. 3.; *Morris, Brit. Fos.* 177.

Belemnites lanceolatus *Schloth. Taschenb.* vii. 111. 1813 (not lanceolatus *Sow.* 1829), *Petrif.* 49. n. 8.; *Pusch, Polens. Paléont.* 162. n. 2.

Belemnites hastatus *Blainv. Belemn.* 71. n. 12. t. 1. f. 4. t. 2. f. 4. t. 5. f. 3., *Dict. Sc. Nat.* 1827, f. 5.; *Raspail, Ann. Sc. d'Observ.* t. 8. f. 91.; *Desh. Encyc.* ii. 127. n. 9.; *Hartm. Wurt.* 16.; *Keferst.* 426. n. 50.; *Deslongch. Mém. Soc. Linn.* 38. t. 1. f. 4, 5.; *D'Orb. Paléont. Franç. Terr. Jur.* i. 121. n. 27. t. 18, 19., *Paléont. du Voy. de M. Homm. de Hell.* iii. 420. n. 1., *Paléont. univ.* t. 52, 53., *Moll. Viv. et Fos.* i. 513., *Belemn.* n. 21. t. 37. f. 15—20.; *Matheson, Catal.* 258. n. 279.

Belemnites semihastatus *Blainv. Belemn.* 72. n. 13. t. 2. f. 5. t. 5. f. 1, 2. 1827, *Zieten, Wurt.* 22. t. 22. f. 4.; *Hartmann, Wurt.* 17.; *Keferst. Dict.* 428. n. 88.; *Roemer, Ool.* 175. n. 25.; *Pusch, Polens. Paléont.* 162. n. 6.

Belemnites gracilis *Raspail, Ann. Sc. des Observ.* t. 5. f. 17, 18. 1829; *Morris, Brit. Fos.* 177.

Belemnites ferruginosus *Voltz, Mem.* 36. t. 1. f. 8. 1830; *Keferst.* 425. n. 41.

Actinocamax fusiformis *Voltz, Mem.* 34. t. 1. f. 6. 1830.

Actinocamax lanceolatus *Hartm. Zieten*, t. 25. f. 3. 1830.

Belemnites semisulcatus *Munster, Belemn.* 7. t. 1. f. 1. 8. 15. 1830; *Keferst.* 428. n. 87.

Belemnites pusillus *Munster, Belemn.* 8. t. 1. f. 9, 10. young, 1830; *Keferst.* 427. n. 74.; *Roemer, Ool.* 177.

Belemnites deformis *Munster, Belemn.* 8. t. 1. f. 11. 1830; *Keferst.* 427. n. 34.

Belemnites plano-hastatus *Roemer, Nord. Ool.* 177. n. 30. t. 12. f. 2. 1836.

Belemnites fusoïdes *Potiez et Mich. Gall.* i. 22. n. 5. 1838.

Hab. Lower and Middle Oxford Clay.

31. Belemnites Duvalianus.

Shell elongate, slender, rather spindle-shaped, compressed, anteriorly attenuated, posteriorly acuminated, beneath grooved; groove narrow, not interrupted; aperture oval, compressed.

Belemnites Duvalianus *D'Orb. Paléont. Franç. Terr. Jur.* i. 127. n. 29. t. 20. f. 6—10. 1842, *Paléont. univ.* t. 54. f. 6, 7., *Moll. Viv. et Fos.* i. 518., *Belemn.* n. 23.

Hab. Lower Oxford Clay.

32. BELEMNITES COQUANDUS.

Shell elongate, club-shaped, anteriorly attenuated, posteriorly thickened, sharp-pointed, beneath smooth, laterally grooved; grooves excavated posteriorly, and forked; alveolus ?

Belemnites coquandus *D'Orb. Paléont. Franc. Terr. Jur.* i. 130. n. 31. t. 21. f. 11—18. 1842, *Paléont. univ.* t. 63. f. 11—18., *Moll. Viv. et Fos.* i. 533. n. 36.; *Matheson, Catal.* 258. n. 282.

Hab. Middle Oxford Clay.

33. BELEMNITES SAUVANAUSUS.

Shell elongate, anteriorly attenuate, posteriorly thickened, sharp-pointed, beneath anteriorly deeply slit; aperture somewhat square, beneath sinuated; alveolus, angle 20°.

Belemnites Sauvanausus *D'Orb. Paléont. Franç. Terr. Jur.* i. 127. n. 30. t. 21. f. 1—10. 1842, *Paléont. univ.* t. 63. f. 1—10., *Moll. Viv. et Fos.* i. 532. n. 35.; *Matheson, Catal.* 258. n. 281.

B. Sauvanosus *D'Orb.* l. c. 81.

Hab. Middle Oxford Clay.

34. BELEMNITES DEDAYANUS.

Shell elongate, somewhat spindle-shaped, anteriorly compressed attenuated, impressed laterally, posteriorly acuminate, beneath one-grooved; groove posteriorly interrupted; aperture compressed, sinuated.

Belemnites Dedayanus *D'Orb. Paléont. Franç. Terr. Jur.* i. 126. n. 28. t. 20. f. 1—5. 1842, *Paléont. univ.* t. 54. f. 1—5., *Moll. Viv. et Fos.* i. 531. n. 34.

Hab. Middle Oxford Clay.

35. BELEMNITES ENIGMATICUS.

Shell very short, obtuse, smooth, posteriorly obtusely rounded; aperture somewhat square, above sinuated; alveolus with an angle of 20°.

Belemnites enigmaticus *D'Orb. Paléont. Franç. Terr. Jur.* i. 131. n. 32. t. 22. f. 1—3., *Paléont. univ.* t. 64. f. 1—3., *Moll. Viv. et Fos.* i. 534. n. 37.

Hab. Middle Oxford Clay.

36. BELEMNITES LATISULCATUS.

Shell elongate, slender, spindle-shaped, anteriorly alternately depressed, posteriorly depressed, acute, beneath longitudinally grooved; groove not interrupted; aperture depressed.

Belemnites latisulcatus *D'Orb. Paléont. univ.* t. 50. f. 3—8. 1846, *Paléont. Franç. Terr. Jur. Supp.* t. 3. f. 3—8., *Moll. Viv. et Fos.* i. 517., *Belemn.* n. 22.

Hab. Oxford Clay, and Kelloway Rock.

37. Belemnites Grantianus.

Shell elongate, cylindrical, compressed, beneath longitudinally broadly grooved; groove excavated; aperture roundedly compressed; alveolus at an angle of 17°.

Belemnites canaliculatus *Grant, Trans. Geol. Soc.* 2d ser. v. t. 23. f. 2, 3. 1837 (not Schloth.).
Belemnites Grantianus *D'Orb. Paléont. univ.* t. 58. 1846, *Paléont. étrang.* t. 32., *Moll. Viv. et Fos.* i. 523., *Belemn.* n. 27.

Hab. India. Kellovian deposit?

38. Belemnites Altdorfensis.

Shell rather elongate, conical, anteriorly and posteriorly depressed, longitudinally grooved; groove anteriorly disappearing; aperture roundedly depressed; alveolus at an angle of 20°.

Belemnites Helveticus *Defrance collection; Blainv. Belemn.* 68.
Belemnites Altdorfensis *Blainv. Belemn.* 67. n. 9. t. 2. f. 1. 1827; *Desh. Encyc.* ii. 126. n. 7.; *Harlm. Wurt.* 15.?; *Keferst. Dict. Nat.* 424. n. 10.; *D'Orb. Paleont. univ.* t. 55. f. 7. 11. t. 59. f. 1. 3., *Paléont. étrang.* t. 33. f. 1—3., *Moll. Viv. et Fos.* i. 522. n. 26.
Belemnites absolutus *Fischer, Oryct. Genv. Moscow*, 173. t. 49. f. 2. 1837; *D'Orb. Murch. and Vern. Russia*, ii. 421. n. 3. t. 29. f. 1—9.
Belemnites Beaumontianus *D'Orb. Paléont. Franç. Terr. Jur.* 118. t. 16. f. 7—11.

Hab. Lower Oxford Clay.

39. Belemnites Volgensis.

Shell elongate, somewhat spindle-shaped, anteriorly square-shaped, posteriorly depressed, longitudinally broadly grooved; groove excavated, continuous; aperture square; alveolus 27°.

Belemnites Volgensis *D'Orb. Murch. and Vern. Russia*, ii. 410. n. 1. t. 28. f. 1—14. 1844, *Paléont. univ.* t. 60., *Paléont. étrang.* t. 34., *Moll. Viv. et Fos.* i. 525. n. 29.

Hab. Oxford Clay. Banks of the Volga.

Fossils in Coralline Grit.

40. BELEMNITES ROGERIANUS.

Shell elongate, slender, spindle-shaped, depressed, posteriorly acuminate, anteriorly attenuated, beneath anteriorly grooved; groove disappearing in the middle.

Belemnites pistilliformis *Blainv. Belemn.* t. 5. f. 17. 1827 (exclus. f. 14—16.).

Belemnites Rogerianus *D'Orb. Paléont. Franç. Terr. Jur.* 132. n. 33. t. 22. f. 9. 15. 1842, *Paléont. univ.* t. 64 f. 9. 15., *Moll. Viv. et Fos.* i. 535. n. 38.

Hab. Upper Oxford Clay.

Fossils in Greensand.

41. BELEMNITES BIPARTITUS.

Shell elongate, spindle-shaped, anteriorly narrowed, somewhat four-sided, posteriorly acuminated, acute, laterally compressed. longitudinally grooved; above rounded; beneath anteriorly grooved.

Pseudobelus bipartitus *Blainv. Belemn. Sup.* 113. t. 5. f. 19. 1828.

Belemnites bicanaliculatus *Blainv. Belemn. Sup.* 120. t. 5. f. 9. (exclus. f. 8.) 1828; *Raspail, Ann. Sc. Observ.* 58.

Belemnites bisulcus *Raspail*, l. c. iii. 88. t. 4. f. 20, 21. 1829.

Belemnites bipartitus *Catullo, Ann. des Sc. Nat. di Bologna*, v. 311. 1829; *Desh. Encyc. Méth.* 128. n. 11.; *D'Orb. Paléont. Franç. Terr. Cret.* i. 45. n. 2. t. 3. f. 6. 12., *Paléont. univ.* t. 69. f. 6. 12., *Moll. Viv. et Fos.* i. 539. n. 43.; *Duval, Belemn.* 41. t. 1. f. 1. 8.

Hab. Greensand (Etage Néocomien).

42. BELEMNITES PISTILLIFORMIS.

Shell elongate, rather spindle-shaped, anteriorly acuminate, posteriorly acutely pointed, laterally and longitudinally two-grooved, beneath grooved anteriorly; alveolus 20.

Beudant, Observ. sur les Belemn. t. 3. f. 9. 1810.

Belemnites minimus *Blainv. Belemn.* 119. t. 4. f. 1. t. 5. f. 6. (not minimus *Lister.*)

Belemnites pistilliformis *Blainv. Belemn.* 98. t. 5. f. 14, 15. (exclus. f. 16, 17.) 1827 (not Roemer, 1835; not Sow. 1829); *Raspail, Ann. Sc. Observ.* i. 327. t. 8. f. 95. 97. 100. 102.; *D'Orb. Paléont. Franç. Terr. Cret.* i. 53. n. 6. t. 6. f. 1. 4., *Paléont. univ.* t. 34. f. 1. 4. t. 68. f. 9, 10. t. 70.. *Terr. Cret*

Supp. t. 5., *Moll. Viv. et Fos.* i. 540. n. 44.; *Duval, Belemn.* 72. t. 8. f. 10. 16.

Belemnites subfusiformis *Raspail, Hist. Nat. Belemn.* 55. t. 8. f. 93. 1829; *D'Orb. Paléont. Franç. Terr. Cret.* i. 53. n. 5. t. 4. f. 9. 16.; *Duval, Belemn.* 66. t. 9, 10.

Belemnites crassior *Raspail, Ann. Sc. d'Observ.* 57. t. 8. f. 84. 1829.

Belemnites crassissimus *Rasp.* l. c. 327. t. 8. f. 85. 87. 1829.

Belemnites aculeus echini *Rasp.* l. c. 327. t. 8. f. 87. 1829.

Belemnites hastatus *Rasp.* l. c. t. 8. f. 91. 1829.

Belemnites symmetricus *Rasp.* l. c. 54. t. 8. f. 90. 101. 1829.

Belemnites præmorsus *Rasp.* l. c. 55. t. 8. f. 27. 1829.

Belemnites contortus *Rasp.* l. c. 56. t. 8. f. 28, 29. 1829.

Belemnites oblongus *Rasp.* l. c. 52. t. 8. f. 82. 1829.

Belemnites navicula *Rasp.* l. c. 51. t. 8. f. 79. 1829.

Belemnites brevirostris *Rasp.* l. c. 51. t. 8. f. 80. 1829.

Belemnites fusus *Rasp.* l. c. 52. t. 8. f. 81. 1829.

Belemnites gemmatus *Rasp.* l. c. 51. t. 8. f. 77. 1829.

Belemnites rostratus *Rasp.* l. c. 51. t. 8. f. 78. 1829.

Actinocamax fusiformis *Voltz, Obs. sur les Belemn.* 34. t. 1. f. 6. young, 1830.

Actinocamax Milleri *Voltz, Obs. sur les Belemn.* 35. t. 1. f. 7. adult, 1830.

Belemnites pistillum *Roemer, Nord. Ool.* 108. t. 16. f. 7. 1836, *Nord. Kreid.* 83. n. 2.

Hab. Greensand (Etage Néocomien).

43. Belemnites bicanaliculatus.

Shell elongate, subcylindrical, anteriorly rather four-sided, posteriorly obtusely acuminate, laterally anteriorly longitudinally grooved, beneath anteriorly grooved.

Belemnites bicanaliculatus *Blainv. Belemn. Supp.* 120. t. 5. f. 8. (exclus. f. 9.) 1828; *Keferst. Dict. Nat.* 424. n. 16.; *D'Orb. Paléont. Franç. Terr. Cret.* i. 47. n. 3. t. 3. f. 13. 16., *Paléont. univ.* t. 69. f. 13. 16. t. 71. f. 5. 8., *Terr. Cret. Supp.* t. 6. f. 5. 8., *Moll. Viv. et Fos.* i. 544. n. 47.

Hab. Greensand (Etage Néocomien).

44. Belemnites semicanaliculatus.

Shell elongate, cylindrical, posteriorly acuminate, pointed, anteriorly compressed on the sides, beneath sulcate; groove disappearing in the middle of its length; aperture entire; alveolus at an angle of 18.

Belemnites semicanaliculatus *Blainville, Belemn.* 67. t. 1. f. 13. 1827; *Desh. Enc. Méth.* ii. 126. n. 6.; *D'Orb. Paléont. Franç.*

Terr. Cret. i. 59. n. 9. t. 5. f. 10. 15., *Paléont. univ.* t. 76. f. 10. 15. t. 74. f. 7. 9., *Terr. Cret. Sup.* t. 9. f. 7. 9., *Moll. Viv. et Fos.* i. 553. n. 54.; *Duval, Belemn.* 74. t. 6. f. 5. 12.

Hab. (Etage aptice.)

45. BELEMNITES MINARET.

Shell elongate, rather acuminate, anteriorly rounded, beneath one-grooved, posteriorly depressed, sharply conical; alveolus at an angle of 18.

Belemnites rimosus *Raspail, Ann. Sc. d'Obs.* i. 319. t. 8. f. 68. 1829.
Belemnites depressus *Rasp.* l. c. 319. t. 8. f. 69. 1829.
Belemnites incurvatus *Rasp.* l. c. 319. t. 8. f. 71.
Belemnites marginatus *Rasp.* l. c. 319. t. 8. f. 70. 73, 74.
Belemnites attenuatus *Rasp.* l. c. 319. t. 8. f. 72.
Belemnites gibbosus *Rasp.* l. c. 320. t. 8. f. 76.
Belemnites asulus *Rasp.* l. c. 308. t. 6. f. 19.?
Belemnites rugosus *Rasp.* l. c. 322. t. 8. f. 89.
Belemnites minaret *Raspail*, l. c. 323. t. 8. f. 94. 1829; *D'Orb. Paléont. univ.* t. 75. f. 1. 8., *Terr. Cretac. Supp.* t. 10. f. 1. 8., *Moll. Viv. et Fos.* i. 551. n. 52.
Belemnites platyurus *Duval, Belemn.* 73. t. 11. f. 1. 3. 1841.

Hab. Greensand (Etage Néocomien).

Fossils in Gault.

46. BELEMNITES MINIMUS.

Shell elongate, club-shaped (young), posteriorly obtuse (adult), attenuated, acute, anteriorly narrowed, truncate, beneath one-grooved, laterally and longitudinally two-grooved.

Belemnites minimus *Lister, Hist. An. Aug.* 228. f. 32. 1678; *Miller, Trans. Geol. Soc.* t. 9. f. 6. 1823; *Blainv. Belemn.* 75. t. 4. f. i. c. and *Supp.* 118. (part); *Sow. Min. Conchol.* t. 589. f. 1.; *Keferst. Dict. Nat.* 427. n. 63.; *Bronn, Lethæa Geog.* t. 33. f. 13.?; *Michelin, Mém. Soc. Géol.* ii. 100.; *D'Orb. Paléont. Franç. Terr. Cret.* i. 57. n. 8. t. 5. f. 3. 9., *Paléont. univ.* t. 76. f. 3. 9., *Moll. Viv. et Fos.* i. 554. n. 55. t. 37. f. 21. 23.; *Geinitz. Charak.* 68. t. 17. f. 32, 33, 34.?; *Roemer, Kreideg.* 84. n. 3.?; *Morris, Brit. Fos.* 177.
Belemnites Listeri *Mantell, Geol. of Sussex*, 88. t. 19. f. 17, 18. 23. 1822; *Phillips, Geol. Yorksh.* t. 1. f. 18.
Belemnites attenuatus *Sow. Min. Conch.* t. 589. f. 2. 1828; *Keferst. Dict. Nat.* 424. n. 15.; *Morris, Brit. Fos.* 177.
Belemnites jaculum *Phillips, Geol. Yorksh.* t. 3. f. 1.? 1829; *Morris, Brit. Fos.* 177.

Hab. Gault. England, &c.

Fossil in Juronien.

47. BELEMNITES ULTIMUS.

Shell elongate, cylindrical, smooth, anteriorly roundedly compressed, beneath one-grooved; groove disappearing gradually; posteriorly acuminately pointed; alveolus at an angle of 20.

Belemnites ultimus *D'Orb. Paléont. univ.* t. 75. f. 9—13. 1846; *Terr. Cret. Supp.* t. 10. f. 9. 13., *Moll. Viv. et Fos.* i. 556. n. 56.

Hab. (Etage Juronien.)

3* *Dorsal Groove distinct.*—Nostocœli *D'Orb. Bronn*, l. c. 150. Gastrosiphites *Duval*, l. c.

† *The Style compressed, often much enlarged, with a distinct deep dorsal Groove, and distinct lateral Grooves.*—Fossil. Néocomien. Dilatati *D'Orb.* l. c. 481.; *Bronn*, 150.

48. BELEMNITES DILATATUS.

Shell oblong, very much compressed, rather lanceolate, somewhat convex on the sides, longitudinally one-grooved, posteriorly obtuse, anteriorly grooved; alveolus at an angle of 20 .

Belemnites dilatatus *Blainv. Belemn.* 29. t. 3. f. 13. b. d. t. 5. f. 18. 1827; *Catullo, Ann. di Hor. di Bologna*, v. 310.; *Desh. Enc. Méth.* 132. n. 24.; *Keferst: Dict. Nat.* 425. n. 36.; *D'Orb. Paléont. Franç. Terr. Cret.* i. 39. n. 1. t. 2. f. 20, 21. t. 3. f. 4, 5., *Paléont. univ.* t. 65. f. 7—15. t. 66. f. 20, 21. t. 69. f. 4, 5., *Terr. Cret. Supp.* t. 3. f. 7—15., *Moll. Viv. et Fos.* i. 550. n. 51.; *Duval, Belemn.* 54. t. 4.; *Matheson, Catal.* 268. n. 283.
Belemnites linearis *Raspail, Hist. Nat. Belemn.* 36. n. 8. t. 6. f. 11.
Belemnites elegans *Rasp.* l. c. 36. n. 9. t. 6. f. 10.
Belemnites anomalus *Rasp.* l. c. 36. n. 10.
Belemnites variegatus *Rasp.* l. c. 41. n. 1. t. 7. f. 55.
Belemnites fumosus *Rasp.* l. c. 41. t. 7. f. 58.
Belemnites apiculatus *Rasp.* l. c. 42 t. 7. f. 56.
Belemnites sinuatus *Rasp.* l. c. 42. t. 7. f. 59.
Belemnites spathulus *Rasp.* l. c. 42. t. 7. f. 61.
Belemnites ellipsoïdes *Rasp.* l. c. 43. t. 7. f. 48.
Belemnites complanatus *Rasp.* l. c. 43. t. 7. f. 63, 64.
Belemnites Delphinus *Rasp.* l. c. 44 t. 7. f. 47.
Belemnites bifurcatus *Rasp.* l. c. 44. t. 7. f. 67.
Belemnites augustus *Rasp.* l. c. 44. t. 7. f. 66.
Belemnites amorphus *Rasp.* l. c. 44. t. 7. f. 49.
Belemnites triqueter *Rasp.* l. c. 44. t. 7. f. 46.
Belemnites pseudo-formosus *Rasp.* l. c. 45. t. 8. f. 83.
Belemnites emarginatus *Rasp.* l. c. 45. t. 7. f. 50, 51. 60.

Belemnites difformis *Rasp.* l. c. 45. t. 7. f. 54.
Belemnites mitra *Rasp.* l. c. 45. t. 7. f. 53.
Belemnites mitræformis *Rasp.* l. c. 46. t. 7. f. 52.

Hab. (Etage Néocomien.)
a, *b*, *c*, *d*. Fossil style. Castellane. From Mr. Crantz's Collection.

49. BELEMNITES EMERICI.

Shell oblong, very much compressed, anteriorly dilated, compressed on the sides, swollen, dilated in the middle, depressed in the sides, posteriorly obliquely acuminate, above grooved; alveolus at an angle of 18°.

Belemnites Emerici *Raspail*, *Ann. Sc. d'Obs.* i. 302. n. 1. t. 6. f. 1. 1829; *D'Orb. Paléont. Franç. Terr. Cret.* i. 617., *Paléont. univ.* t. 66. f. 22, 23. t. 69. f. 1—3. t. 73. f. 1—7., *Terr. Cret. Supp.* t. 8. f. 1—7., *Moll. Viv. et Fos.* i. 548. n. 50.; *Duval, Belemn.* 58. t. 5. f. 1—7.
Belemnites pileus *Raspail*, l. c. 304. n. 2. t. 6. f. 2. 5. 1829.
Belemnites affinis *Raspail*, l. c. 304. n. 3. t. 6. f. 3, 4. 1829.
Belemnites dilatatus *D'Orb. Paléont. Franç. Terr. Cret.* t. 2. f. 22, 23. t. 3. f. 1—3. (pars) 1839.

Hab. (Etage Néocomien.)

50. BELEMNITES LATUS.

Shell elongate, lanceolate, oblique, thick, compressed, posteriorly obtusely mucronate, beneath longitudinally broadly grooved; apex excentric; alveolus with an angle of 20°.

Belemnites latus *Blainv. Mém. sur les Belemn. Supp.* 121. t. 5. f. 10. (adult) 1828; *D'Orb. Paléont. Franç. Terr. Cret.* i. 48. n. n. 4. t. 4—8. (exclus. f. 1—5.), *Paléont. univ.* t. 67. f. 1—9. t. 68. f. 4—8., *Terr. Cret. Supp.* t. 4. f. 1—9., *Moll. Viv. et Fos.* i. 538., *Belemn.* n. 41.; *Duval, Belemn.* 61. t. 6. (exclus. f. 1.); *Matheson, Cat.* 258. n. 284.
Belemnites obesus *Raspail, Ann. Sc. d'Obs.* i. 307. t. 6. f. 13. 1829.
Belemnites Honoratii *Raspail*, l. c. 316. t. 8. f. 88. 1829.
Belemnites convexus *Raspail*, l. c. 42. t. 7. f. 17. 1829.
Belemnites persona tonsoria *Raspail*, l. c. 46.

Hab. (Etage Néocomien.)

51. BELEMNITES BINERVIUS.

Shell oblong, compressed, nearly equal, anteriorly narrow, above grooved, flattened at the sides, two-striated, posteriorly obtusely pointed; alveolus with angle at 21—30°.

Belemnites binervius *Raspail*, *Ann. Sc. d'Observ.* i. 34. n. 4. t. 6. f. 6. 1829; *D'Orb. Résumé sur les Céphal. Terr. Cret.* i. 617., *Paléont. univ.* t. 65. f. 1—6. t. 66. f. 9—19., *Terr. Cretac. Supp.* t. 3. f. 1—6., *Moll. Viv. et Fos.* i. 536. n. 40.

Belemnites pisciformis *Raspail*, *Ann. Sc. d'Obs.* i. 43. t. 7. f. 65. 1829.

Belemnites acinaciformis *Raspail*, l. c. 35. n. 5. t. 6. f. 8. 1829.

Belemnites truncatus *Raspail*, l. c. 35. n. 6. t. 6. f. 9. 1829.

Belemnites distans *Raspail*, l. c. 36. n. 7. t. 6. f. 7. 1829.

Belemnites dilatatus *D'Orb. Terr. Cretac.* 39. t. 2. f. 9—19. 1839.

Belemnites hybridus *Duval*, *Belemn.* 51. t. 3. 1841.

Hab. (Etage Néocomien.)

52. Belemnites Orbignyanus.

Shell elongate, somewhat cylindrical, smooth, above somewhat compressed, beneath grooved; groove disappearing in the middle, posteriorly depressly mucronate; alveolus with an angle of 18°.

Belemnites Orbignyanus *Duval*, *Belemn.* 65. t. 8. f. 4—9. 1841; *D'Orb. Paléont. univ.* t. 67. f. 10—16., *Terr. Cret. Supp.* t. 4. f. 10—16., *Moll. Viv. et Fos.* i. 539., *Belemn.* n. 42.

Hab. (Etage Néocomien.)

53. Belemnites conicus.

Shell short, conical, rather cylindrical, thick, anteriorly dilated, posteriorly acuminated, acute, beneath longitudinally broadly grooved; groove keeled on the sides.

Belemnites conicus *Blainv. Belemn.* 118. t. 5. f. 4. young, 1827; *D'Orb. Paléont. univ.* t. 68. f. 13. t. 71. f. 9—16., *Terr. Cret. Supp.* t. 6. f. 9—16., *Moll. Viv. et Fos.* i. 545. n. 48.

Belemnites exstinctorius *Raspail*, *Ann. Sc. d'Obs.* i. 308. t. 6. f. 20. (adult) 1829.

Belemnites latus *D'Orb. Terr. Cret.* t. 4. f. 1—3. (exclus. f. 4—8.) 1840; *Duval*, *Belemn.* t. 6. f. 1—4. (exclus. f. 2, 3. 5. 8.)

Fos. Greensand (Etage Néocomien).

54. Belemnites Grasianus.

Shell oblong, compressed, anteriorly somewhat cylindrical, posteriorly acuminate, acute, above longitudinally broadly grooved; groove externally keeled; alveolus 20°.

Belemnites Grasianus *Duval*, *Belemn.* 63. t. 7. f. 1—4. 1841; *D'Orb. Paléont. univ.* t. 73. f. 8—13. t. 74. f. 1—6., *Terr. Cret.*

Supp. t. 8. f. 8—13. t. 9. f. 1—6., *Moll. Viv. et Fos.* i. 552. n. 53.

Fos. Greensand (Etage Néocomien).

55. BELEMNITES BAUDOUINII.

Shell elongate, conical, smooth, anteriorly dilated, posteriorly acuminate, acute, beneath grooved.

Belemnites Baudouinii *D'Orb. Paléont. Franç. Terr. Cret.* i. 54. n. 7. t. 5. f. 1, 2., *Paléont. univ.* t. 76. f. 1, 2., *Moll. Viv. et Fos.* i. 544., *Belemn.* n. 46.

Fos. Greensand (Etage Néocomien).

56. BELEMNITES POLYGONALIS.

Shell elongate, lanceolate, compressed, anteriorly four-sided and lobed, above one-grooved, posteriorly square, on the sides flat or excavated, above and beneath posteriorly flattened or excavated; apex acuminate, pointed; alveolus at an angle of 20—22°.

Belemnites polygonalis *Blainv. Belemn. Supp.* 121. n. 156. t. 5. f. 10. 1827; *Raspail, Ann. Sc. d'Obs.* i. 330. 1829; *D'Orb. Paléont. univ.* t. 66. f 1—8. t. 72., *Terr. Cret. Supp.* t. 7., *Moll. Viv. et Fos.* i. 546. n. 49.

Group Tetragonolobi *Raspail*, l. c. iii. 87. t. 4 f. 1—7. 1830.

Group Tetragoni *Raspail*, l. c. iii. 87. t. 4. f. 8. 13. 1830.

Group Heteromorphi *Raspail*, l. c. iii. 88. t. 4. f. 14—19.

Belemnites dilatatus *D'Orb. Terr. Cret.* t. 2. f. 1—8. (exclus. f. 9—23.

Belemnites isosceles *Duval, Belemn.* 46. t. 1. f. 9—16. 1841.

Belemnites urnula *Duval*, l. c. 47. t. 2. f. 1—7. 1841.

Belemnites trabiformis *Dural*, l. c. 48. t. 2. f 8—14. 1841.

Belemnites sicyoides *Duval*, l. c. 49. t. 2. f. 15—20. 1841.

Fos. Greensand (Etage Néocomien).

Doubtful Species.

57. BELEMNITES LAMELLA.

Belemnites lamella *Faure Biguet, Cons. sur les Belemn.* 39. n. 1. f. 3, 4. 1819; *D'Orb. Paléont. univ.* t. 77. f. 12—17., *Paléont. étrang.* t. 37. f. 12—17., *Moll. Viv. et Fos.* i. 557. n. 57.

Fos. Valdrome en Diois.

58. Belemnites vagina.

Belemnites vagina *Faure Biguet, Belemn.* 40. n. 2. 1819; *D'Orb. Moll. Viv. et Fos.* i. 557. n. 58.

Fos. Valdrome en Diois.

59. Belemnites capulus.

Belemnites capulus *Faure Biguet, Belemn.* 41. n. 3. 1819; *D'Orb. Moll. Viv. et Fos.* i. 558. n. 59.

Fos. Valdrome en Diois.

60. Belemnites colutea.

Belemnites colutea *Faure Biguet, Belemn.* 42. n. 4. 1819; *D'Orb. Moll. Viv. et Fos.* i. 558. n. 60.

Fos. Osson.

61. Belemnites coronilla.

Belemnites coronilla *Faure Biguet, Belemn.* 42. n. 5. 1819; *D'Orb. Moll. Viv. et Fos.* i. 558. n. 61.

Fos. Commane.

62. Belemnites siliqua.

Belemnites siliqua *Faure Biguet, Belemn.* 43. n. 6. 1819; *D'Orb. Moll. Viv. et Fos.* i. 559. n. 62.

Fos. Commane.

63. Belemnites legumen.

Belemnites legumen *Faure Biguet, Belemn.* 44. n. 7. 1819; *D'Orb. Moll. Viv. et Fos.* i. 559. n. 63.

Fos. Commane.

64. Belemnites cassia.

Belemnites cassia *Faure Biguet, Belemn.* 44. n. 8. 1819; *D'Orb. Moll. Viv. et Fos.* i. 559. n. 64.

Fos. ——?

65. Belemnites catalpa.

Belemnites catalpa *Faure Biguet, Belemn.* 45. n. 9. f. 5. 1819; *D'Orb. Paléont. univ.* t. 77. f. 18., *Paléont. étrang.* t. 37. f. 18., *Moll. Viv. et Fos.* i. 560. n. 65.

Fos. Monte Cindre.

66. BELEMNITES ATTENUATUS.

Belemnites attenuatus *Faure Biguet, Belemn.* 47. n. 10. 1819 (not attenuatus *Sow.* 1828.) ; *D'Orb. Moll. Viv. et Fos.* i. 561. n. 66.

Fos. Drôme.

67. BELEMNITES CLAVA.

Belemnites clava *Faure Biguet, Belemn.* 48. n. 11. 1819 ; *D'Orb. Moll. Viv. et Fos.* i. 561. n. 67.

Fos. Commane.

68. BELEMNITES INDEX.

Belemnites index *Faure Biguet, Belemn.* 50. n. 12. 1819 ; *D'Orb. Moll. Viv. et Fos.* i. 562. n. 68.

Fos. Valdrome.

69. BELEMNITES DACTYLUS.

Belemnites dactylus *Faure Biguet, Belemn.* 51. n. 13. t. . f. 6. 1819 ; *D'Orb. Paléont. univ.* t. 77. f. 19., *Paléont. étrang.* t. 37. f. 19., *Moll. Viv. et Fos.* i. 563. n. 69.

Fos. Commane.

70. BELEMNITES DIGITUS.

Belemnites digitus *Faure Biguet, Belemn.* 51. n. 14. 1819 ; *D'Orb. Paléont. univ.* t. 77. f. 20—22., *Paléont. étrang.* t. 37. f. 20—22., *Moll. Viv. et Fos.* i. 563. n. 70.

Fos. Drôme.

71. BELEMNITES DIGITULUS.

Belemnites digitulus *Faure Biguet, Belemn.* 53. n. 15. 1819 ; *D'Orb. Moll. Viv. et Fos.* i. 564. n. 71.

Fos. Commane.

72. BELEMNITES STRIATUS.

Belemnites striatus *Faure Biguet, Belemn.* 53. n. 16. 1819 ; *D'Orb. Moll. Viv. et Fos.* i. 564. n. 72.

Fos. Commane.

73. BELEMNITES DENS.

Belemnites dens *Faure Biguet, Belemn.* 55. n. 17. 1819 ; *D'Orb. Moll. Viv. et Fos.* i. 564. n. 73.

Fos. Couzon.

74. BELEMNITES FULMEN.

Belemnites fulmen *Faure Biguet, Belemn. 55.* n. 18. 1819; *D'Orb. Moll. Viv. et Fos.* i. 565. n. 74.

Fos. Commane.

75. BELEMNITES TONITRUUM.

Belemnites tonitruum *Faure Biguet, Belemn.* 56. n. 19. 1819; *D'Orb. Moll. Viv. et Fos.* i. 565. n. 75.

Fos. Lyon.

76. BELEMNITES JACULUM.

Belemnites jaculum *Faure Biguet, Belemn.* 56. n. 20. 1810; *D'Orb. Moll. Viv. et Fos.* i. 565. n. 76.

Fos. Mont Cindre.

77. BELEMNITES SULCULATUS.

Belemnites sulculatus *Risso, Hist. Nat. Eur. Mer.* iv., *Moll.* 14. n. 31. 1826; *D'Orb. Moll. Viv. et Fos.* i. 566. n. 77.

Fos. Calcareous Marl, Alps.

78. BELEMNITES DACTYLUS.

Belemnites dactylus *Risso, Hist. Nat Eur. Mer.* iv., *Moll.* 14. n. 32. 1826; *D'Orb. Moll. Viv. et Fos.* i. 566. n. 78.

Fos. Chloritic Marl.

79. BELEMNITES TUBULOSUS.

Belemnites tubulosus *Risso, Hist. Nat. Eur. Merid.* iv., *Moll.* 14. n. 33. 1826; *D'Orb. Moll. Viv. et Fos.* i. 566. n. 79.

Fos. Choritic Grit, Rocca tagliada.

80. BELEMNITES META.

Belemnites meta *Blainv. Belemn.* 87. t. 3. f. 3. 1827; *D'Orb. Paléont. univ.* t. 77. f. 8—9., *Paléont. étrang.* t. 37. f. 8—9., *Moll. Viv. et Fos.* i. 566. n. 80.

Fos. ——— ?

81. BELEMNITES ANOMALUS.

Belemnites anomalus *Phillips, Geol. Yorksh.* 166. 1829; *D'Orb. Moll. Viv. et Fos.* i. 566. n. 81.

Fos. Kelloway Rock, Yorkshire.

82. BELEMNITES TORNATILIS.

Belemnites tornatilis *Phillips, Geol. Yorksh.* 166. 1829; *D'Orb. Moll. Viv. et Fos.* i. 566. n. 82.

Fos. Kelloway Rock, Yorkshire.

83. BELEMNITES CYLINDRIFORMIS.

Belemnites cylindriformis *Parkinson, Org. Rem.* iii. 127. t. 8. f. 10—14.; *D'Orb. Paléont. univ.* t. 77. f. 1., *Moll. Viv. et Fos.* i. 567. n. 83.

Fos. ——— ?

84. BELEMNITES SUBUNGULATUS.

Belemnites subungulatus *Hartmann, Zieten, Wurt.* 33. t. 25. f. 2. 1830; *D'Orb. Paléont. univ.* t. 77. f. 2. 6., *Paléont. étrang.* t. 37. f. 2—6., *Moll. Viv. et Fos.* i. 567. n. 84.

Fos. Lias, Hartz.

85. BELEMNITES ACICULA.

Belemnites acicula *Munster, Bemerkungen zur Nahern Ken. des Belemn.* 8. t. 1. f. 14. 1830; *Keferst. Dict. Nat.* 424. n. 3.; *D'Orb. Paléont. univ.* t. 77. f. 7., *Paléont. étrang.* t. 37. f. 7., *Moll. Viv. et Fos.* i. 567. n. 85.

Fos. Perhaps young, *B. Puzosianus.*

86. BELEMNITES PREVOSTII.

Shell elongately conical, narrow, somewhat club-shaped, smooth; apex acute, many-striated; striæ very fine, deep.

Belemnites Prevostii *Desh. Encyc. Méth. Vers.* ii. 130. n. 16. 1830; *D'Orb. Moll. Viv. et Fos.* i. 567. n. 86.

Fos. ——— ?

Apocryphal Species.

87. BELEMNITES OBTUSUS.

Belemnites obtusus *Blainv. Belemn.* 101. n. 42. t. 3. f. 14. 1827; *D'Orb. Paléont. univ.* t. 77. f. 10, 11., *Paléont. étrang.* t. 37. f. 10, 11. (bad figure), *Moll. Viv. et Fos.* i. 568.

Established by Blainville, from a copy of a bad figure from Knorr, Supp. t. 14. f. 2.

88. BELEMNITES BIFORATUS.

Knorr, Monuments, ii. sect. 2. 242. t. 1*. f. 7. 1.

Pactites biforatus *Montf. Conch. Syst.* 318. gen. 80. 1808.
Belemnites biforatus *Schloth. Min. Tasch.* viii. 76. 1813; *D'Orb. Moll. Viv. et Fos* i. 568.

Established by Montfort from a bad figure of Knorr's.

89. Belemnites ungulatus.

Knorr, Monum. iii. iv. sup. 146. t. 4. f. 8, 9.
Belemnites ungulatus *Schloth. Petref.* 50. n. 9. 1820; *D'Orb. Moll. Viv. et Fos.* i. 568.
Thalamus polymitus *Montf. Conch. Syst.* 323. 1808.

Established by Schlotheim from a bad figure of Knorr's.

90. Belemnites alveolatus.

Callirhoe alveolatus *Montf. Conch. Syst.* 363. 1808.
Belemnites alveolatus *D'Orb. Moll. et Viv.* i. 569.

Established by Montfort upon an alveolus of a Belemnite.

91. Belemnites glaber.

Knorr, Monum. ii. sect. 2. 241. t. 1*. f. 4.
Cetocis glaber *Montf. Conch. Syst.* 371. 1808.
Belemnites cretaceus glaber *Schloth. Min. Tasch.* vii. 69. t. 35. 1813.
Belemnites penicellatus *Schloth. Petref.* 50. n. 10. 1820.
Belemnites glaber *D'Orb. Moll. Viv. et Fos.* i. 569. 1845.

Established upon a rolled fragment; indeterminable.

92. Belemnites polyforatus.

Knorr, Monuments, ii. sect. 2. 241. t. 1*. f. 1—3.
Acamas polyforatus *Montf. Conch. Syst.* 374. 1808.
Belemnites polyforatus *Schloth. Min. Tasch.* vii. 69. 1813, *Petref.* 50. n. 11.; *Blainv. Belemn.* 103. n. 45.; *D'Orb. Moll. Viv. et Fos.* i. 569.
Belemnites ungulatus *Blainv. Belemn.* 78. n. 18. 1827 (not *Schloth.* 1813).

Established upon a bad figure of Knorr's.

93. Belemnites pyrgopolon Mosæ.

Pyrgopolon Mosæ *Montf. Conch. Syst.* 394. gen. 99. 1808.
Belemnites pyrgopolon Mosæ *Schloth. Min. Tasch.* vii. 110. 18. 13. *D'Orb. Moll. Viv. et Fos.* i. 569.
Belemnites canaliculatus *Schloth. Petref.* 49. n. 7. 1820.

Established by Montfort upon a fragment of a rolled Belemnite.

94. BELEMNITES RETICULATUS.

Knorr, Monum. ii. sect. 2. 133. t. 6, 7. f. 4.
Chrysaor hercininus *Montf. Conch. Syst.* 378. 1808.
Belemnites reticulatus *Schloth. Min. Tasch.* vii. 110. 1813; *D'Orb. Moll. Viv et Fos.* i. 569.

Established by Montfort upon a bad figure of Knorr's.

95. BELEMNITES FISTULOSUS.

Belemnites fistulosa *Blainv. Belemn.* 100. n. 41. 1827; *D'Orb. Moll. Viv. et Fos.* i. 569.

Established by Blainville, after a figure representing a longitudinal section, taken from Knorr, ii. t. 1. f. 5.

APPENDIX.

Beak of Cephalopoda.

1. CONCHORHYNCHUS.

Animal unknown.—*Beak* testaceous. Mandibles triangular, broad, upper? angular in front, convex, angular externally, and marked with radiating ribs, three medial and three lateral; the inner part concave; dental edge with regular prominences and depressions; the lower? with radiating ribs, with a hood in front; the anterior end blunt, and the dental part with strong facets.

Glossopetres sp. and Histerolites sp. *Knorr.*
Rhyncholites *Munster, Beitr.* 1829.
Conchorhynchus *Blainville, Belemn.* 115. 1827; *D'Orb. Moll. Viv. et Fos.* i. 587.
Lepadites *Schlotheim, Petref.* 1820.
Sepia rostrum *Blumenbach, Arch.* i. 21.; *Brongn. Ann. Sic. Nat.* ii. 485.; *Gaillardot, Ann. Sic. Nat.* ii. 1824. 485.

Fos. Muschelkalk.

1. CONCHORHYNCHUS AVIROSTRES.

Beak triangular.

Knorr, ii. t. 11. i. a. f. 9, 10. 1768.
Gmelin, N. G. Mineral, iii. t. 6. f. 79, 80.
Schroet. Lyt. Lexic. viii. 207.
Sepia rostrum *Blumenbach, Arch.* i. 21. t. 2. f. 5. a. (b. c.?)
Bec de Sèche *Gaill. Ann. Sci. Nat.* 1824. ii. t. 22. f. 12.
Lepadites avirostres *Schlotheim, Petref.* 169. t. 29. f. 10. 1820.
Conchorhynchus ornatus *Blainv. Belemn.* 115. t. 4. f. 12. 1827.
Rhyncholites Gaillardoti *Zieten, Wurtz.* 49. t. 37. f. 2. 1830; *Hartm. Wurtz.* 31. t. 37. f. 2. 1830; *D'Orb. Ann. Sci. Nat.* v. 219.
Sepia Gaillardoti *Keferst. Dict. Nat.* 53. 1834.

Conchorhynchus avirostris *Bronn, Lethæa, Géog.* 1827; *Munster, Beitr.* 1839, i. 69. t. 5. f. 2, 3.; *D'Orb. Paléont. univ.* t. 78. f. 1. 6., *Moll. Viv. et Fos.* 590. t. 38. f. 1. 6.

a. Muschelkalk, upper layer. Bayreuth. Presented by J. E. Gray, Esq.

2. CONCHORHYNCHUS DUPLICATUS.

Rhyncolitus duplicatus *Munster, Beitr.* i. 70. t. 5. f. 5. 1829.
Conchorhynchus duplicatus *D'Orb. Paléont. univ.* t. 73. f. 7. 10., *Moll. Viv. et Fos.* t. 38. f. 7—10. from Munster.

Fos. Muschelkalk, Bavaria.

3. CONCHORHYNCHUS CASSIANUS.

Conchorhynchus Cassianus *Meyer-Klepstein, Beitr. z. Geog.* 145. t. 9. f. 7. 1843; *D'Orb. Paléont. univ.* t. 78. f. 7—10., *Moll. Viv. et Fos.* i. 591. t. 38. f. 11, 12. from Klepstein.
C. Cassianicus *Bronn, Gesch. d. Nat.* iii. 323.

Fos. Muschelkalk, saliferous bed, Austrian Alps.

2. RHYNCHOLITES.

Animal unknown. — *Beak* testaceous, depressed, triangular or elongate, broader than thick; above angular, smooth, convex; triangular, acuminated in front, broad behind, and ending in two winglike expansions.

Rhyncolithes sp. *Faure Biguet*, 1819; *Rousseau, Voy. Demid.; D'Orb. Tab. Céphal.* 72., *Ann. Sci. Nat.* v. 9. t. 6. f. 2. 1825.
Rhynchoteuthis *D'Orb. Moll. Viv. et Fos.* i. 593. 1847.

Fos. Of the Jurassic period.

* *Kelloway Rock.*

1. RHYNCHOLITES HONORATIANUS.

Rhynchoteuthis honoratianus *D'Orb. Paléont. univ.* t. 79. f. 1. 4. 1847., *Moll. Viv. et Fos.* i. 594. t. 39. f. 1. 4., *Ter. Juras. Supp.* t. 4. f. 1—4.

Fos. Dignes, Lower Alps.

2. RHYNCHOLITES ANTIQUATUS.

Rhyncholites antiquatus *Rousseau, Voy. Demid.* t. 1. f. 1.
Rhynchoteuthis antiquatus *D'Orb. Moll. Viv. et Fos.* i. 595. t. 39. f. 5. 8.

Fos. Crimea.

** *Oxford Clay.*

3. RHYNCHOLITES EMERICI.

Anterior part smooth, keeled above, much pointed in front.

Rhyncholites Emerici *D'Orb. Tab. Céphal.* 72. 1825.
Rhyncholite aigu *Blainv. Belemn.* t. 5. f. 22. 1827.
Rhynchoteuthis Emerici *D'Orb. Paléont. univ.* t. 79. f. 9. 12., *Moll. Viv. et Fos.* i. 595. t. 39. f. 9. 12.

Fos. Dignes.

4. RHYNCHOLITES LARUS.

Blunt in front, with a prominence beneath.

Rhyncholites Larus *Faure Biguet*, 58. t. 1. f. 2. t. 6. f. 2. 1819; *D'Orb. Ann. Sci. Nat.* 1825. v. 8. t. 6. f. 2.
Rhynchoteuthis Larus *D'Orb. Paléont. univ.* i. t. 79. f. 13. 16. 1847; *Moll. Viv. et Fos.* i. 396. t. 39. f. 13. 16.

Fos. Rians.

5. RHYNCHOLITES COQUANDIANUS.

Front part smooth, pointed; hinder part concave, with a central groove; wing short.

Rhynchoteuthis Coquandianus *D'Orb. Paléont. univ.* i. 579. f. 17. 20., *Moll. Viv. et Fos.* i. 597. t. 39. f. 17. 20.
R. Larus, lower mandibles, *D'Orb.* l. c.

Fos. Rians.

3 * *Néocomien.*

6. RHYNCHOLITES ALATUS.

Beak of *Belemnites Emerici?*

Rhynchoteuthis alatus *D'Orb. Paléont. univ.* i. t. 80. f. 1. 4. 1847, *Moll. Viv. et Fos.* i. 598.

Fos. Cheiron.

4 * *Aptien.*

7. RHYNCHOLITES ASTERIANUS.

Rhynchoteuthis asterianus *D'Orb. Paléont. univ.* i. t. 80. f. 57. 1847, *Moll. Viv. et Fos.* i. 598.

Fos. Blieux.

ROYAL ASIATIC SOCIETY BOMBAY BRANCH

5 * *Senoien.*

8. RHYNCHOLITES DUTEMPLEI.

Like *R. Emerici*, but shorter.

Rhyncholites Dutemplei *D'Orb. Moll. Viv. et Fos.* i. 599.

Fos. Chevot.

Doubtful Species.

9. RHYNCHOLITES TUBERCULATUS.

Rhyncholites tuberculatus *Faure Biguet*, 59. 1809.
Rhynchoteuthis tuberculatus *D'Orb. Moll. Viv. et Fos.* i. 600

Fos. Valdrome.

10. RHYNCHOLITES UNIDENTATUS.

Rhyncholites unidentatus *Faure Biguet*, 58. 1819.
Rhynchoteuthis unidentatus *D'Orb. Paléont. univ.* 1847, *Moll. Viv. et Fos.* 599.

Fos. Valdrome.

11. RHYNCHOLITES HASTA.

Rhyncholites hasta *Faure Biguet*, 59. 1819.
Rhynchoteuthis hasta *D'Orb. Moll. Viv. et Fos.* 599.

Fos. Luc.

Additions and Corrections.

Mr. Frederick Edwards having re-examined the *Beloptera anomala* (p. 118.) of Mr. James Sowerby, and formed a genus for it, the character is here given, and they should be added at p. 118.

4. BELEMNOPSIS.

Animal ——— ? — *Shell* internal, oblong, semi-conical; apex inflexed towards the ventral aspect, and elongated into an umbo; the anterior part with a deep semi-conical cavity, ending in a pore at the ventral side of the umbo internally; cavity lined with two concentric calcareous layers, continued over the ventral surface, and enveloping a series of transverse septa, perforated by a ventral siphon.

Belemnopsis *F. Edwards, Cephalopes of London Clay*, 38. ined.
Beloptera sp. *Sow. Min. Conch.*

This genus is, perhaps, the type of a new family.

1. BELEMNOPSIS ANOMALA.

Beloptera anomala, p. 118.
Belemnopsis plicata *F. Edwards, Ceph. London Clay*, 40. t. 2. f. 3. ined.

Fos. London Clay. Cabinet of F. Edwards, Esq.

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THE END.

LONDON:
SPOTTISWOODES and SHAW,
New-street-Square

PREFACE.

THE chief objects in forming the present Synoptical Catalogue have been, to exhibit at one view a complete list of all the specimens of MOLLUSCA in the British Museum collection, and to furnish such an account of the species known to exist in other collections, but which are at this time desiderata in the British Museum, as the materials at hand would permit me to compile, in order to enable travellers, collectors, and others, to assist in completing the national collection.

For this purpose, short descriptions have been given of all the genera and species of recent Mollusca now known to exist in the different museums and private collections, and of the better-known fossil species of the various families.

At the end of each description is added an enumeration, stating the state, age, country, or strata, and other peculiarities, of each specimen of the kind in the Museum collection; and, when the species is not at present in that collection, the museum in which it has been observed is often added after the general habitat or locality of the species. The different individuals of each species contained in the British Museum collection are indicated by the letters *a*, *b*, *c*, &c.

Those specimens which have been presented to the Museum have the name of the donor marked immediately after the

habitat. When there is no such indication, the specimens have been either purchased or procured in exchange; and in this case, whenever the place or person from whom they have been received gives authenticity to the specimen, or adds anything to their history, they are noted as being from such and such a collection or locality. Great attention has been paid to dates, and the generic and specific names which appear to possess priority in this respect have been adopted. Reference has also been made to the works in which the genera and species appear to have been first described or noticed.

Catalogues like the present can be little more than compilations, and I have freely availed myself of the labours of my predecessors in the same field; especially of those who have published monographs of the different groups: but the characters of the orders, families, minor groups, and species, have been compared and revised with the specimens.

J. E. GRAY.

11*th January*, 1850.

CATALOGUE

OF

PTEROPODA.

CLASS IV. PTEROPODA.

Head more or less distinct. Eyes none. Mouth often furnished with cup-shaped appendages.

Fins 2 on the sides of the mouth, or 2 or rarely 4 on the side of the body between the head and abdomen: often furnished with a small intermedial lobe between them, apparently the rudiment of the foot of Gasteropodes.

Body ovate or roundish, often enclosed in a thin, conical, cylindrical or subglobular shell, with a transverse contracted mouth.

Individual unisexual?

Animals free, floating on the surface of the sea by the assistance of their fins. Nocturnal or crepuscular.

Clio, *Browne, Jam.* 386, 1756; *Linn. S. N.* ed. 12, i. 1094, 1767.
Mollusca Brachiata, part, *Poli. Test. Sicil.* i. 27.
Mollusca nuda nageant, part, *Latr. Dict. Hist. Nat.* xxiv. 108, 1804.
Cephalopoda pinnata, *Esch. Zool. Atlas*, iii. 1829; *Menke, Zeitschr. Mal.* 72, 1844.
Pterobranches (ou Pterodibranches), *Blainv. Bull. Soc. Philom.* 1814, 177; *Organ. Anim.* i. t. 8, 1822.
Pterodibranchiata, *Blainv. Bull. Soc. Philom.* 1816, 28, 122.
Acephales, part, *Blainv. Bull. Soc. Philom.* 1814, 179.
Pteropoda (Pteropodes), *Cuvier, Ann. du Mus.* iv. 223, 1804; *Bronn, Gesch. d. Natur.* iii. 353, 1847; *D'Orb. Voy. Amer. Merid.* 65; *Rang, Man. Moll.* 112, 1829; *Gray, Proc. Zool. Soc.* 1847, 203.

Les Mollusques Pteropodes, *Lamk. Hist.* ed. 2, vii. 412.
Stomatopterophora, *Gray, Med. Repos.* 1821, 235.
Aporobranchiata (Aporobranches), *Blainv. Man. Malac.* 480, 1825.
Fam. Pteropodes, *Desh. in Lamk. Hist.* ed. 2, vii. 213.
Cephalophora Pteropoda Hyalacea, *Alton, Verz. Conch.* 12.
Therozoa pteropoda, *Eichw. Zool. Spec.* i. 310.

Forskal (*Faun. Arab.* 124) and Lamarck (*Hist. ed.* 2, vii. 415) compared the upper and lower part of the shell of a *Hyalæa* to the valves of the Brachiopodes, which they regard as united together; but this is a mere analogical resemblance in the single species, and not a true resemblance resulting from any affinity, as is proved by the form of the valves of the other genera of the order. The shell of the Pteropoda, is a single valves, analogous to the larger valves of the Gasteropodes, and to one (and not both) of the valves of the Brachiopodes.

Loven compares the fins on the side of the head to the fins on the side of the head of the fœtal or first-hatched shell of Gasteropodes, which are sometimes retained in the form of a fringe on each side of the body in the adult animal, as Turbo, Trochus, &c.

M. D'Orbigny gives the following as the result of his observations on the geographical distribution and habits of these animals. Of the 29 species which he has observed, 14 are equally common to all the seas, at least to the Atlantic and Pacific Ocean; 11 have only been observed in the Atlantic, and 4 in the Pacific: 17 of the 29 species are entirely nocturnal and 11 crepuscular. (*Voy. Amer. Merid. Moll.* 72).

The following genera or species have been erroneously referred to this class:—

1. Callianaria (diploptera), *Peron & Lesueur, Ann. Mus.* 1810, t. 2, f. 16, "is probably a Beroe," *Blainv.*
2. Cirropteron, *Sars, Besk.* 77, 1835; *Isis*, 1837, 757. According to Allmann, *Rep. Brit. Assoc.* 1843 (see *Athenæum*, 1843, 852), this is the larva of *Buccinum undatum.*
3. Bellerophina (minuta), *Forbes, Rep. Brit. Assoc.* 1843, 132, is the shell of the larva of various genera of Gasteropodes.
4. Steira, *Eschsch. Isis*, 1825, and
5. Atalanta, *Peron*, are *Gasteropodes.*
5. Pyrgo, *Defrance*, placed with the Pteropoda by Cuvier (*Regn. Anim.* ed. 2) and Blainville (*Dict. Sci. Nat.*), is a Foraminifer allied to *Biloculina.*

6. HYALEA Planci, *Lesueur*, *Ann. Mus.* xv. (*Planchus Min. Conch.* t. 2, f. 6, *g*, *h*, *i*), is also a *Biloculina*.

7. DENTALIUM trachea, *Montague*, which has been formed into a genus by various authors, under different names,—as Cœcum (*Fleming*), Brochus (*Browne*), Odontidium (*Philippi*), Cœcalium (*Macgillivray*), Odontostoma (*Cantraine*), Dentalopsis (*Clarke*), Odontina (*Zhorzewsky*),—has been doubtfully referred to this order by M. Philippi (*Moll. Sicil.* 102). It has lately been proved by Mr. Clarke (*Ann. and Mag. Nat. Hist.* 1849) to be an operculated Gasteropode which will form a new family, which may be called *Cæcidæ*, among the division of the *Ctenobranchiata*.

8. CUDULUS, *Philippi*, probably belongs to the same group.

9. DENTALIUM Gadus, *Montague*, quoted as the genus *Gadus* by *Rang & D'Orbigny* (*Voy. Amer. Merid. Moll.* 75), and referred to the genus *Creseis* by *Rang*, appears to be a true *Dentalium*.

Synopsis of the Orders and Families.

Order I. THECOSOMATA. *Body inclosed in a shell. Head not distinct. Wings* 2, *on the side of the mouth. Gills internal.*

Sub-order I. *Animal and shell straight. Operculum none.*

Fam. 1. CAVOLINIDÆ. Shell calcareous, globular and conical. Animal without any foot-like appendage between the fins.

Fam. 2. TRIPTERIDÆ. Shell calcareous, subcylindrical or conical. Animal with a foot-like appendage between the fins.

Fam. 3. CYMBULIADÆ. Shell cartilaginous.

Sub-order II. *Animal and shell spiral. Operculum spiral.*

Fam. 4. LIMACINADÆ. Animal spiral. Shell spiral, sinistral.

Order II. GYMNOSOMATA. *Body naked. Head distinct. Wings* 2 *or* 4, *on the side of the neck, with an intermediate foot-like appendage. Gills external.*

Fam. 5. CLIONEIDÆ. Head with 6 conical tentacles. Fins 2.

Fam. 6. PNEUMODERMIDÆ. Head with 2 disk-bearing arms. Fins 2.

Fam. 7. CYMODOCIDÆ. Head simple. Fins 4.

Order I. THECOSOMATA.

Body inclosed in a shell.
Head indistinct, with two wings on the sides of the mouth.
Gills internal. *Tooth* of lingual membrane hooked, with a strong hooked tooth on each side.—*Lovén*, t. 3, f. 5, 6.

Thecosoma, *Blainv. Dict. Sci. Nat.* xxxii. 271 (1824); *Malac.* 480 (1825).
Thecosomata, "*Blainv.*" *Rang. Man.* 112; *Gray, Syn. B. M.* 1842, 86, 92; *Proc. Zool. Soc.* 1848, 203.
Cryptocephala, *Latr. Fam. Nat.* 169, 1825.
Pterobranchia and Dactyliobranchia, *Gray, Lond. Med. Rep.* 1821, 235.
Fam. Hyalea, *Ferussac.*
Hyales, *Rang, Man. Moll.* 112 (1829).
Hyalæacea, *Menke, Syn.* 1830.
Hyalinées, *D'Orb. Voy. Amer. Merid.* 77.
Hyalidées, Hyalidæ, *D'Orb. Moll. Cuba*, 70, 71, 1841.

Sub-order I. *Body and shell straight or globular. Operculum none.*

Fam I. CAVOLINIDÆ.

Animal with two united fins, without any posterior foot-like appendage between them. Abdomen voluminous. Gills in pairs, internal superior organs of generation on right side.
Shell calcareous, symmetrical, elongate or globular.

Dactyliobranchia, *Gray, Lond. Med. Repos.* 1821.
Cleodoridæ, *Gray, Syn. Brit. Mus.* 184; *Proc. Zool. Soc.* 1848, 203; *Fig. Mol. Anim.* i. t. 77, 78.
Hyaleæ (Les Hyales), *Ferus. Tabl.* 25, 1821; *Rang, Man.* 112, 1829; *Desh. Ency. Meth.* iii. 310.
Hyalæaceæ (Hyaleaceæ), *Menke, Syn.* 4, 1828.
Hyalæacea, *Menke, Syn. ed.* 2, 6, 1830.
Hyaleacea, *Herrmannsen, Gen.* i. 543, 1846.
Hyalidæ (or Hyaleidæ), *Cantraine, Malac. Medit.* 22, 1841.
Acephalacis inequivalvibus bivalvibus, *Lamk. Syst.* 139.
Hyalidæ, *D'Orb. Moll. Canar.* 1837; *Moll. Cuba*, i. 70, 1841.
Acephales, part, *Latr. Dict. Hist. Nat.* xxiv. 119, 1804; *Blainv. Bull. Soc. Phil.* 1814, 179.

Synopsis of the Genera.

1. Cavolina. Shell subglobular. Mouth contracted, with a separate lateral slit on each side.
2. Diacria. Shell globular. Mouth contracted, with a contiguous slit on each side.
3. Clio. Shell elongate, angular, conical. Mouth expanded, without any lateral slit.
4. Balantium. Shell triangular, depressed, transverse, waved. Mouth oblong, narrow, oblique, without any side slit.
5. Vaginella. Shell oblong, ventricose, smooth; apex conical. Mouth contracted, narrow, transverse, without any side slit.
6. Styliola. Shell conical, subcylindrical, tapering. Mouth expanded, without any lateral slits.

A. *Shell with lateral slit, emitting the mantle.*

1. CAVOLINA.

Body short, sometimes furnished with lateral appendages.—*Shell* globular; mouth narrower than the internal cavity, with a lateral slit on each side, interrupted in front.

Cavolina (tridentata), *Gioëni, Desc.* 4to, Naples, 1783; *Abild. Skrivt. Naturg. Selsk.* i. 171, 1791, not *Brug.* 1792; *Schum, Essai*, 9.
Tricla (tridentata), *Retzius, Nov. Gen.* 1788.
Rheda, *Humph. Mus. Cat.* 1797.
Hyalæa, *Lamk. Prod.* 1799; *Syst. A. S. V.* 139, 1801; *Hist.* vi. 284, *ed.* 2, vii. 413; *Cuvier, Anat. Comp.* 1800; *Ann. du Mus.* iv. 223, 1804; *D'Orb. Mol. Cuba.*
Hyaleus (tridentata), *Montf. Conch. Syst.* ii. 47, 1810.
Hyalea globulosæ, *Rang, Man.* 114, 1829.
Hyalus, *Froriep & Meckel.*
Hyaleæ, *Schweigger, Naturgesch.* 749, 1820; *Deshayes; Van Beneden, Nov. Mem. Acad. Brux.* xii. 1839; *Cantraine, Malac. Medit.* 23, 1841; *D'Orb. Moll. Cuba*, 1, 71.
Anomia sp., *Forsk. Faun. Arab.* 1776.
Fissurella sp., *Brug.; Megerle*, 1811.
? Archonta, *Montf. C. S.* ii. 50, 1810.
? Glandiolus, *Montf. C. S.* i. 314, 1808.
Monoculus sp., *Lesson.*
Caulina, *Poli, Test. Sicil.*

* *Shell globular, hinder central process short.*

1. CAVOLINA TRIDENTATA.

Shell yellowish, pellucid, thin, very finely striated transversely; terminal tooth longer than the lateral ones.

Anomia tridentata, *Gmelin, S. N.* 3348, No. 42; *Forsk. Arab.* 124, t. 40, f. 6; *Chem. Conch.* viii. 65, vignette 13, *f. g.*; *Chiage Mem.* iii. t. 44, f. 1, 2.
Cavolina natans, *Abildgaard, Soc. Hist. Nat. Copenh.* i. Part 2, t. 10; *Cuvier, Ann. du Mus.* iv. 224, t. 59.
Caulina natans, *Poli, Test. Sicil.* iii. 39, t. 44, f. 1, 2.
Hyalæa papilionacea, *Bory de St. Vincent, Voy.* i. 137, t. 5, f. 1; *Blainville, Dict. des Sc. Nat.* xxii. 86, f. 2.
Hyalæa cornea, *Roissi, Buff. de Sonnini*, v. 73; *Lamk. Syst.* 1801.
Hyalæa tridentata, *Bosc. Coq.* ii. 241, t. 9, f. 4; *Lamk.* vi. 286; *D'Orb.* 1839; *Hist. Nat. Isles Canar. Moll.* 27; *Ram. de Sagra, Hist. Isle Cuba, Moll.* 72; *Philippi, Sicil.* 101, ii. 70.
Hyalæa Chemnitziana, *Peron et Lesueur, Ann. du Mus.* xv.
Hyalæa Forskalii, *Lesueur, D'Orb. Voy. Amer. Merid. Moll.* 89, t. 5, f. 1—5.
Hyale tridentée, *Voy. Bonite Moll.* t. 4, f. 1, 7, t. 9, *anal.*
Hyalæa truncata, *Krauss, Sudafr. Moll.* 34, t. 2, f. 12.

a—e. Shell. Gulf of Guinea. Presented by J. Crouch, Esq.
f—i. Shell. Borneo. Presented by the Admiralty.
j. Shell.
k—m. Shell. India.
n. Shell. Naples.
o—q. Animal and shell, in spirits. Borneo. Presented by Capt. Sir Edward Belcher, R.N., C.B.
r, s. Animal and shell, in spirits. Tropical Seas. Presented by Lieut. A. Smith, R.N.

2. CAVOLINA TENIOBRANCHIA.

Hyalæa teniobranchia, *Peron, Ann. Mus. Hist. Nat.* xv. t. 3, f. 13.
Hyalea Peronii, *Rang.*

Hab.

3. CAVOLINA AQUENSIS.

Hyalæa aquensis, *Gratel. Bull. Bord.* ii, 4, 1827; *Conch. Pterop.* 21, t. 1, f. 1, 2; *Atlas*, t. 1, f. 1, 2.
Hyalea Orbignii, *Rang, Mem. Paris*, ii. 387, 1827; *Ann. S. Nat.* xvi. 496, t. 19, f. 3, 1829.

Fossil.

4. CAVOLINA AFFINIS

Shell globular, inflated, horny, posteriorly three-spined; middle spine longer and narrower than the others, slightly inflexed; aperture transverse, narrow; inferior lip very long, narrow, sinuated superiorly.

Hyalæa affinis, *D'Orb. Voy. Am. Mer. Moll.* 91, t. 5, f. 6—10; *Desh. in Lamk. Hist.* ed. 2, vii. 418.
? Hyalæa Peronii, *Lesueur, Bull. Soc. Phil.* 1813.

Hab.

5. CAVOLINA GIBBOSA.

Shell globular, inflated, very gibbous anteriorly, three-spined posteriorly; lateral spines short, middle acuminated, strongly recurved; aperture narrow, deeply covered with the lip.

Hyalæa gibbosa, *Rang, Monogr.* ined.; *D'Orb. Voy. Am. Merid. Moll.* 95, t. 5, f. 16—20 (1836); *Moll. de Canàries*, 28; *Ram. Sagra, Hist. Cuba Moll.* 74; *Philippi, Sicil.* ii. 71; *Cantraine, Bull.* 27, t. 1, f. 5; *Lamk. Hist. ed.* 2, vii. 419.
Hyale bossue, *Voy. Bonite Moll.* t. 4, f. 13, 19.

a—*c*. Animal and shell, in spirits. Presented by Lieut. A. Smith, R.N.

6. CAVOLINA UNCINATA.

Shell globular, of a transparent horny colour, posteriorly three-spined; median spine longest, strongly curved, hooked; aperture narrow; lips shorter than in the other species.

Hyalæa uncinata, *Rang*, pl. ined.; *D'Orb. Voy. Am. Merid. Moll.* 93, t. 5, f. 11—15 (1836); *Ramon, Sagra, Hist. Cuba Moll.* 73, t. 2, f. 1—4; *Desh. in Lamk. Hist. ed.* 2, 418.
Hyale à crochet, *Voy. Bonite Moll.* t. 4, f. 8, 12.

a—*e*. Shell. Coast of Brazil. Presented by Dr. Sinclair, R.N.
f. Shell.
g—*r*. Shell. Red Sea.
s—*z*. Animal and shell, in spirits. Tropics. Presented by Lieut. A. Smith, R.N.

7. CAVOLINA FLAVA.

Shell ovate, gibbous, glassy, posteriorly three-spined; middle spine the longest, slightly curved; aperture narrow; inferior lip in form of a hood, somewhat beaked, arched.

Hyalæa flava, *D'Orb. Voy. Am. Mer. Moll.* 97, t. 5, f. 21—25; *Desh. in Lamk. Hist. ed.* 2, 418.

Hab.

8. CAVOLINA GLOBULOSA.

Hyale globuleuse, *Rang. Voy. Bonite Moll.* t. 4, f. 20, 24, not described.

Hab.

9. CAVOLINA ANGULOSA.

Hyale angulée, *Eydoux & Souleyet, Voy. Bonite Moll.* t. 4, f. 1, 6, not described.

Hab.

10. CAVOLINA QUADRIDENTATA.

Shell somewhat globular, inflated, posteriorly obtuse, with four teeth on the margin; marked on the back with five grooves, gibbous on upper part, smooth; aperture narrow, very finely cleft laterally; apex sometimes truncated.

Hyalæa quadridentata, *Lesueur, D'Orb. Voy. Amer. Merid. Moll.* 98, t. 6, f. 1—5; *Blainv. Dict. des Sc. Nat.* xxii. 81 (1822); *Rang. Monogr.* ined.; *D'Orb. Moll. des Canar.* 25; *Ram. Sagra Hist. Cuba Moll.* 75; *Desh. in Lamk. Hist. ed.* 2, vii. 419.

Hyale à quatre dents, *Voy. Bonite Moll.* t. 4, f. 25, 32.

H. quadrispinosa, *D'Orb. Amer. Merid. Moll.* 85.

Hab.

11. CAVOLINA LONGIROSTRA.

Shell ovate, globular, terminated anteriorly with a rather long, arched, channelled beak, posteriorly shortly truncate, laterally provided with short hooked wings, inferiorly three-ribbed; aperture transverse, narrow.

Hyalæa longirostra, *Lesueur, D'Orb. Voy. Am. Mer. Moll.* 100, t. 6, f. 6—10; *Blainv. Dict. Sc. Nat.* xxii. 81; *D'Orb. Moll. des Canar.* 29; *Ram. Sagra Hist. Cuba Moll.* 76; *Desh. in Lamk. Hist. ed.* 2, vii. 419, n. 11.

Hyale longirostre, *Voy. Bonite Moll.* t. 5, f. 7, 13.

Hab. Atlantic Ocean, *Lesueur.* Amboina and Teneriffe, *Quoy.*

a—z. Shells. St. Vincent's, W. I. From the Rev. L. Guilding's collection.

12. CAVOLINA LIMBATA.

Shell rounded, globular, flat beneath, truncated posteriorly, laterally provided with triangular wing-shaped appendages; aperture transverse, narrow; labrum terminated by a rather long channelled beak.

Hyalæa limbata, *D'Orb. Voy. Am. Mer. Moll.* 101, t. 6, f. 11—15; *Ram. Sagra Hist. Cuba Moll.* 77, t. 2, f. 5—8; *Desh. in Lamk. Hist.* ed. 2, vii. 417.

Hyalæa longirostris, *Quoy et Gaim. Voy. Ast.* ii. 380, t. 26, f. 20—24; *Desh. in Lamk. Hist. ed.* 2, vii. 416.

Hab.

** *Shell oblong, elongated; central process elongate, conical.*

13. CAVOLINA LABIATA.

Shell elongated, of a somewhat trapezoidal form, inflated, terminated posteriorly by a very long point; aperture transverse, with very long lip-shaped margins.

Hyalæa labiata, *D'orb. Voy. Am. Mer. Moll.* 104, t. 6, f. 21—25; *Moll. des Canar.* 29; *Ram. Sagra Hist. Cuba Moll.* 78, t. 9, f. 12; *Desh. in Lamk. ed.* 2, vii. 421.

Hyale labiée, *Voy. Bonite Moll.* t. 5, f. 27, 32.

Hab.

14. CAVOLINA INFLEXA.

Shell elongated, conical, compressed on each side, elongated posteriorly, terminated by a recurved point, laterally armed with a short point; aperture ovately transverse, laterally deeply cleft.

Hyalæa inflexa, *Lesueur, Bull. Soc. Philom.* xiii. No. 69, t. 5, f. 4, *a, b, c, d; Blainv. Dict. Sc. Nat.* xxii. 80; *D'Orb. Voy. Am. Mer. Moll.* 103, t. 6, f. 16—20; *Ram. Sagra Hist. Cuba Moll.* 79; *Desh. in Lamk. Hist.* ed. 2, vii. 422.

Hyale inflechie, *Voy. Bonite Moll.* t. 5, f. 21, 26.

Hyalæa vaginella, *Cantraine, Bull. Brux.* ii. 380; *Philippi, Sicil.* ii. 71.

Hyalæa uncinata, *Hœninghaus. MSS.; Philippi, Sicil.* i. 101, t. 6, f. 18, not *Rang.?*

Hab.

2. DIACRIA.

Body short, sometimes with lateral appendages.—*Shell* globular; mouth narrower than the cavity, with a slit on each side, not interrupted in front; apex often truncated in the adult.

Diacria (trispinosa), *Gray*, *Syn. Brit. Mus.* 1840, 1842; *Proc. Zool. Soc.* 1847, 203; *Agass. Nom.*; *Herrm. Ind. Gen. Malac.* i. 383.
Hyalea *b.* elongata, *Rang. Man.* 114, 1829.
Hyalæa **, *D'Orb. Voy. Amer. Merid.* 77; *Cuba*, 80.

1. DIACRIA TRISPINOSA.

Shell elongated, straight, dilated anteriorly, compressed on each side, terminated posteriorly with a very long spine, armed laterally with two short spines.

Hyalæa trispinosa, *Lesueur*, *Blainv. Dict. Sci. Nat.* xxii. 82; *D'Orb. Voy. Am. Mer. Moll.* 106, t. 7, f. 1—5, and t. 20, f. 1, 2; *Moll. des Canar.* 29, No. 14; *Ram. Sagra Hist. Cuba Moll.* 80; *Chemn. Conch.* i. 65, vign. 13, f. *a—d* (1785); *Rang*, *Monog.* ined. t. 3; *Guerin*, *Icon. Reg. Anim. Moll.* t 4; *Blainv. Dict. Sc. Nat.* xxii. 82; *Lamk. Hist.* ed. 2, vii, 421, No. 15; *Desh. E. M.* iii. 310; *Philippi*, *Sicil.* ii. 71; *Loven*, *K. Vet. Akad.* 1847, t. 3, f. 4; *Forbes & Hanley*, *Brit. Moll.* ii. 380, t. U, f. 3.
H. depressa, *Bivon*, *Efem. Sicil.* t. 1, f. 4, 5; *Philippi*, *Sicil.* i. 101, t. 6, f. 19.
H. triacantha, *Guidotti*, *Bronn*, *Ital.* 85.
Hyale à trois pointes, *Voy. Bonite Moll.* t. 6, f. 1, 10.

a—g. Shell. Coast of Brazil. Presented by Dr. Sinclair, R.N.

2. DIACRIA ORBIGNII.

Shell ovate, globular, smooth on the upper part and convexly gibbous, flattish inferiorly, radiately grooved, terminated anteriorly by an inflexed semicircular lip; deeply cleft at the sides; posterior extremity scarcely prominent.

Hyalea Orbignii, *Rang*, *Ann. Sci. Nat.* xvi. 496, t. 19, f. 3; *Desh. in Lamk. Hist. ed.* 2, vii. 417.

Hab. Fossil, St. Paul, near Dax.

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3. DIACRIA MUCRONATA.

Shell reddish coloured, pellucid, thin, triangular, transversely striated, undulated lengthwise, rounded anteriorly; terminal spine sharp, longer than the lateral ones.

Hyalæa mucronata, *Quoy & Gaim. Ann. Sc. Nat.* x. 231, t. 8, f. 1, 2; *D'Orb. Voy. Am. Mer. Moll.* 108, t. 7, f. 6—10.

Hyalæa trispinosa, *Quoy & Gaim. Zool. Astr.* t. 27, f. 17—19, ii. 378 (from *Ann. Sci. Nat.*)

H. trispinosa, part, *Desh. in Lamk. Hist.* ed. 2, vii. 417, n. 4; *Philippi, Sicil.* ii. 71.

Hab.

4. DIACRIA DEPRESSA.

Shell elongated, triangular, superiorly dilated, inferiorly sharp pointed, strongly arched, depressed, glossy, underneath three-ribbed; aperture narrow, semicircular, deeply cleft on each side.

Hyalæa depressa, *D'Orb. Voy. Am. Mer. Moll.* 110, t. 7, f. 11—14; *Desh. in Lamk. Hist. ed.* 2, vii. 422.

Hab.

5. DIACRIA LÆVIGATA.

Shell somewhat round, depressed, thin, shining, glossy, hooked posteriorly, shortly eared on each side.

Hyalæa lævigata, *D'Orb. Voy. Am. Mer. Moll.* 110, t. 7, f. 15—19; *Desh. in Lamk. Hist.* ed. 2, vii. 423.

Hyale lisse, *Voy. Bonite Moll.* t. 5, f. 14, 20.

Hab.

B. *Shell without any lateral slit.*

3. CLIO.

Animal elongate, conical, without lateral appendages.—*Fins* expanded, united behind, without any small intermediate *lobe*.—*Shell* elongate, angular, conical; mouth larger than the cavity, without any lateral slits.

Clio (pyramidata), *Browne, Jam.* 386, 1756 (not *Pallas*, 1774, nor *O. F. Muller*, 1776); *Linn. Syst. Nat. ed.* 12, 1094, 1767; *Gmelin, S. N.* 3149.

Cleodora (pyramidata), *Peron & Lesueur, Ann. Mus.* xv. 1810; *Lamk. Ext. du Cour.* 1812; *Lamk. Hist. A. S. V.* vi. 288, ed. 2, vii. 427; *Blainv. D. S. N.* ix. 386, 1817; *Man. Malac.* 481, 1825; *Cuvier, Reg. Anim.* 1817, ed. 2, 1830; *Rang. Ann. Sci. Nat.* xiii. 302, 1828; *Isis*, 1830, 207; *Desh. E. M.* ii. 242; *Quoy & Gaim. Voy. Astrol. Zool.* ii. 382; *Menke, Syn.* 4; *D'Orbigny, Amer. Merid. Moll.* 111; *Cuba*, i. 70, 81; *Gray, Moll. Fig.* t. 77.

Cliodora (pyramidata), *Schweigger, Naturgesch.* 750, 1820; *Menke, Syn. ed.* 2, 9, 1830.

Hyalæa (part), *Lesueur; D'Orb. Amer. Merid.* 77.

Cleodores proprement dites, *Rang, Man.* 115, 1829.

Pleuropus (pellucidus), *Eschsch. Isis*, 1825; *Zool. Atlas*, iii. 16 (1829).

Pontica (part), *Leach, MSS. B. M.* 1819.

* *Sides of mantle simple.* Clio.

1. CLIO PYRAMIDATA.

Shell triangular, pyramidical, short; mouth obliquely truncated.

Clio pyramidata, No. 1, *Browne, Jamaica*, t. 43, f. 1; *Linn., Gmel.* p. 3148; No. 2, *Voy. de la Peyrouse*, t. 20, f. 1—3, iv. 61; *La Billard. Journ. de Phys.* 1787, xxxi. 207, t. 11, f. 27.

Cleodora pyramidata, *Rang, Mon.* ined.; *Blainv. Dict. Sc. Nat.* ix. 387; *D'Orb. Moll. des Canar.* 30; *Ram. Sagra Hist. Cuba Moll.* 83; *Lamk. Hist.* ed. 2, vii. 429; *Quoy. & Gaim. Voy. Astrol.* ii. 386, t. 27, f. 7, 13.

Hyalæa pyramidata, *D'Orb. Voy. Am. Mer. Moll.* 113, t. 7, f. 30—32, var. *a.* 25—29, var. *b.* t. 8, f. 32, 33; *Bosc. Hist. Nat. Coq.* ii. t. 9, f. 1—3; *Peron & Lesueur, Mem. Ann. Mus.* xv. t. 2, f. 14; *Roissi, Buffon de Sonnini*, v. 73 (vii. 37); *Cantraine, Mem.* 30, t. 1, f. 9.

Hyalæa lanceolata, *Lesueur, Nouv. Bull. Soc. Phil.* iii. No. 69, t. 5, f. 3 (1813).

Cleodora lanceolata, *Rang, Monog.* ined.; *Ann. Sci. Nat.* xvi. t. 19, f. 1? *Quoy & Gaim. Voy. Ast. Moll.* t. 27, f. 6—13, var. *a.*; *Icon. Regn. Anim. Moll.* t. 4, f. 8; *Blainv. Dict. Sc. Nat.* xxii. 80, t. 64; *Philippi, Sicil.* i. 102, ii. 81; *Ferussac, Bull. Sci. Nat.* xii. 349.

Cleodore lanceolée, *Voy. Bonite Moll.* t. 6, f. 17, 25.

Clio caudata, No. 2, *Browne, p.* 386? (indiv. adult?); *Gmel. S. N.* 3148.

Cleodora caudata, *Blainv. Ann. Sc. Nat.* ix. 387, 388; *Lamk. Hist.* ed. 2, vii. 430.
Hyalæa caudata, *Roissi, Buffon de Sonnini*, v. 75? (vii. 37).
Cleodore de Brown, *Blainv. D. S. Nat.* t. 59, f. 1; *Man. Malac.* t. 46, f. 1.
Pontica elegans, *Leach, MSS. Brit. Mus.* 1819.

Hab. Sicily.

a—*o*. Sicily. Presented by A. Melly, Esq.
p, *q*. Congo (Expedition). Presented by the Admiralty.
r, *s*. Coast of Bengal. Presented by Dr. Sinclair, R.N.
t, *u*. Animal and shell, in spirits. Congo Expedition. Pontica elegans, *Leach, MSS. B. M.* 1819.
v, *w*. Animal and shell, in spirits. Sicily. Presented by A. Melly, Esq.

2. CLIO CUSPIDATA.

Shell with the lateral hooked points longer than the intermediate one.

Hyalæa cuspidata, *Bosc. Hist. Nat. Coq.* ii. 241, t. 9, f. 5—7 (1802); *Dict. Hist. Nat. Deterv.* xxv. t. 2, 35; *Lamk. Anim. s. Vert.* vi. 286, ed. 2, vii. 416; *Blainv. Dict. Sc. Nat.* xxii. 82; *D'Orb. Voy. Am. Mer. Moll.* 112, t. 7, f. 20, 24; *Moll. des Canar.* 30, No. 15.
Cleodora cuspidata, *Quoy & Gaim. Voy. Ast. Zool.* ii. 384, t. 27, f. 1—5; *Rang. Monog.* ined.; *D'Orb. Ram. Sagra Hist. Cuba Moll.* 82; *Philippi, Sicil.* ii. 71; *Cantraine, Mem.* 29, t. 1, f. 8.
Cleodore cuspidée, *Voy. Bonite Moll.* t. 6, f. 11, 16.
Cleodora Lessonii, *Rang. Monog.* ined.; *Lesson, Voy. Coq.* t. 10, f. 1.
Cleodora quadrispinosa, *Rang. Monog.* ined.; *Lesson, Voy. Coq.* t. 10, f. 2 (animal erroneous).

a. Shell.
b—*q*. Shells. Sicily. Presented by A. Melly, Esq.
r, *s*. Animal and shelll, in spirits. Sicily. Presented by A. Melly, Esq.

3. CLIO LAMARTINIERI.

Cleodora Lamartinieri, *Rang. Mol. Cuba*, 83, note, from *Lapeyrouse*, t. 20, f. 1, 3; *D'Orb. Ram. Sagra Hist. Cuba Moll.* 83, note.

Hab. Pacific Ocean.

4. CLIO DEPRESSA.

Cleodore plate, *Eydoux & Souleyet, Voy. Bonite Moll.* t. 6, f. 26, 32. not described.

Hab.

5. CLIO CHAPTALII.

Cleodore de Chaptal, *Eydoux & Souleyet, Voy. Bonite Moll.* t. 7, f. 1—5, not described.

Hab.

** *Side of mantle with elongate process.* Pleuropus.

6. CLIO PELLUCIDA.

Shell conical. Side of the mantle with elongated tentacula.

Pleuropus pellucidus, *Eschsch. Isis*, 1825 ; *Zool. Atlas*, iii. 1829, 16, t. 15, f. 1.

Cleodore courtée, *Eydoux & Souleyet, Voy. Bonite Moll.* t. 7, f. 6, 10.

Cleodora, *Blainv. Man. Malac.*

Hab.

*** *Fossil.*

7. CLIO INFUNDIBULUM.

Cleodora infundibulum, *S. Wood, Ann. and Mag. N. H.; Bronn, Gesch.* iii. 353.

Fossil. Crag.

4. BALANTIUM.

Shell triangular, depressed, transversely waved; aperture oblong, narrow, oblique.

Balantium (recurvum), *Leach, MSS. Brit. Mus.* 1819; *J. G. Children, Jour. Roy. Inst.* 1829, xv. 220, t. 7, f. ; *Benson, Jour. Asiat. Soc. Bengal*, iv. 176, 1835, vi. 150, 1837.

Cleodora sp., *Rang, Guerin, Mag. Zool.* 1834, t. 44.

Hyalæa (Cleodora) sp., *D'Orb. Voy. Amer.* 116.

Pontica (recurvum), part, *Leach, MSS. Brit. Mus.* 1819.

1. BALANTIUM RECURVUM.

Shell triangular, compressed, glossy, shining, transversely regularly striated, longitudinally three-ribbed on the back; apex acuminated, recurved; aperture oblong, narrow, oblique, angled on each side.

Balantium recurvum, *Children, Journ. Inst. Roy.* xv. 220, t. 7; *Rang, Mon.* ined.; *Benson, Jour. Asiat. Soc. Bengal*, iv. 176, 1835; vi. 150, 1837.
Cleodora balantium, *Rang; Guerin, Mag. Zool.* 1834, t. 44; *Desh. in Lamk. Hist.* ed. 2, vii. 431.
Hyalæa balantium, *D'Orb. Voy. Am. Mer. Moll.* 116, t. 8, f. 1—4.
Cleodore bourse, *Voy. Bonite Moll.* t. 7, f. 11, 16.

a. Shell. Congo Expedition. Presented by the Admiralty.
b. Animal of *a*, in spirits. Congo Expedition. Presented by the Admiralty.
Pontica recurvum, *Leach, MSS. B. M.* 1819.

2. BALANTIUM INFLATUM.

Cleodore renflée, *Eydoux et Souleyet, Voy. Bonite Moll.* t. 7, f. 17, 19.

Hab.

3. BALANTIUM AUSTRALE.

Shell conical, elongate, angulose, above convex, with a slight longitudinal groove, transversely striated; mouth semilinear.

Hyalæa australis, *D'Orb. Voy. Am. Mer. Moll.* 117, t. 8, f. 9—11.
Cleodore australe, *Voy. Bonite Moll.* t. 7, f. 20, 23.

Hab. Cape Horn.

4. BALANTIUM RUGOSUM.

Shell very much depressed, elongate, conical, flattened, slightly arched, irregularly transversely grooved above and below, flat; mouth linear.

Hyalæa rugosa, *D'Orb. Voy. Am. Mer. Moll.* 118, t. 8, f. 12—14.

Hab. Pacific Ocean.

5. VAGINELLA.

Shell oblong, ventricose, smooth; apex conical; mouth contracted, transverse, without any lateral slit.

Vaginella (Vaginelle), *Daud. in Bosc, Vers.* i. 195; *Basterot, Mem. Hist. Nat. Paris*, ii. 19; *Gray, Syn. B. M.* 1842, 86; *Bowdich, Elem. Conch.* i. t. 3, f. 10.
Vaginula, *G. B. Sowerby, Gen.* t. —, *Manual*, 112, ed. 2, 286. (Misprint). Not *Ferussac.*
Vaginule, *D'Orb. Voy. Amer. Merid.* 119 (note).
Creseis sp., *Rang, Ann. Sci. Nat.* xvi. t. 18. f. 2, t. 19, f. 13.
Cleodora sp., *Desh. Ency. Meth.* iii. 1106; *Dict. Class. H. N.; Blainv, Mal.* 481; *Grateloupe, Bull. Linn. Soc. Bord.* ii. 75.

1. VAGINELLA STRANGULATA.

Shell elongately ventricose, with an acute apex, depressed, narrowed at the aperture, smooth; aperture transverse, somewhat ovate, compressed, sinuated on each side.

Cleodora strangulata, *Desh. Dict. Class. H. Nat. in Lamk. Hist.* ed. 2, vii. 431; *Grateloupe, Bull. Linn. Soc. Bord.* ii. 75.
Vaginella *Daudin, in Bosc, Vers.* i. 195.
Vaginella depressa, *Basterot, Mem. Soc. H. N. Paris*, ii. 19, t. 4, f. 16; *Bowdich, Elem. Conch.* i. t. 3, f. 10.
Vaginelle de Bordeaux, *Blainv. Malac.* t. 46, f. 2.
Creseis vaginella, *Rang, Ann. Sci. Nat.* xiii. 309, t. 18, f. 2.
Vaginula Daudinii, *Sow. Gen.* f. 5; *Sow. Man.* 112, ed. 2, 286, fig.

a, *b*. Fossil. Bordeaux.

6. STYLIOLA.

Body elongate, conical, rounded.—*Shell* elongate, conical, subcylindrical; mouth larger than the cavity, without any lateral slits.

Styliola (recta), *Lesueur, in Blainv. Mon. Moll.* 1825.
Cresis (Les Creseis), *Rang, in Ann. Sci. Nat.* xiii. 302, 1828; *Isis*, 1830, 207; *Desh. Dict. Class. H. Nat.* xiv. 351, 1828; *Rang, Mon. Moll.* 115, t. 2, f. 3, 1829.
Creseis (or Criseis?), *Eschsch. Zool. Atlas*, iii. 1829, 17; *D'Orb. Mol. Cuba*, 85; *Sow. Gen.* tab.
Criseis, *Forbes, Rep. Brit. Ass.* 132, 1844.
Crisia, *Menke, Ziet. Mol.* 1844, 72, not *Lamouroux.*

Cleodora c., *Blainv. Mon. Moll.* 1825; *Philippi, Sicil.* ii. 72.
Pleuropus, *Gray, Syn. B. M.* 1841, 85, not *Esch.*
Hyalæa sp., *Quoy & Gaim.*

The French generic name of Rang has been very generally adopted in the place of his Latin one, as in one or two other genera.

1. STYLIOLA SUBULA.

Shell glossy, elongated, slightly inflated, acute at the apex; aperture cordiform, beaked.

Hyalæa subula, *Quoy & Gaim.* 1828; *D'Orb. Voy. Am. Mer. Moll.* 119, t. 8, f. 15—19.
Cleodora subula, *Quoy & Gaim. Ann. Sc. Nat.* x. 233, t. 8, f. 1—3; *Rang, Ann. Sc. Nat.* xiii. 1828, t. 18, f. 1; *D'Orb. Moll. des Canaries*, 31; *Desh. in Lamk. Hist.* ed. 2, vii. 432.
Creseis conica, *Eschsch. Zool. Atlas*, iii. t. 15, f. 3, 1831.
Creseis spinifera, *Rang. Ann. Sc. Nat.* xiii. t. 17, f. 1 (t. 18, f. 1); *Quoy & Gaim. Voy. Ast.* ii. 382, t. 27, f. 15, 16, 44; *Sow. Gen.* f. 4; *Desh. in Lamk. Hist.* ed. 2, vii. 432; *Cantraine, Mem.* 31, t. 1, f. 11.
Creseis subula, *D'Orb. Ram. Sagra Hist. Cuba Moll.* 85.
Cleodora spinifera, *Philippi, Sicil.* ii. 72; *Desh. in Lamk. Hist.* ed. 2, vii. 432.
Cleodore alene, *Voy. Bonite Moll.* t. 6, f. 3—9.

a—y. Shells. Sicily. Presented by A. Melly, Esq.

2. STYLIOLA VIRGULA.

Shell elongate, somewhat cylindrical, apex conical, very acute, arched, tinged with purple, everywhere glossy, smooth and very shining; aperture circular, simple.

Creseis virgula, *Rang, Ann. Sc. Nat.* xiii. 17, f. 2, 1828; *Icon. Regn. Anim. Moll.* t. 4, f. 9; *D'Orb. Ram. Sagra Hist. Cuba Moll.* 86.
Hyalæa virgula, *D'Orb. Voy. Am. Mer. Moll.* 121, t. 8, f. 26—28.
Cleodora virgula, *D'Orb. Moll. des Canaries*, 31; *Desh. in Lamk. Hist.* ed. 2, vii. 433.
Cleodore virgule, *Voy. Bonite Moll.* t. 6, f. 18, 22, 25.
Creseis unguis, *Eschsch. Zool. Atlas*, iii. t. 15, f. 4, 1831.
C. cornucopia, *Eschsch. Z. A.* iii. t. 15, f. 5, 1831.
C. caligula, *Eschsch. Z. A.* iii. t. 15, f. 6, 1831.

Hab. Atlantic and Pacific Oceans.

3. STYLIOLA CORNIFORMIS.

Shell elongate, conical, rounded, smooth, diaphanous; apex very acute, horn-like; mouth circular; lips equal.

Hyalæa corniformis, *D'Orb. Voy. Am. Mer. Moll.* 120, t. 8, f. 20—23.

Creseis corniformis, *D'Orb. Ram. Sagra Hist. Cuba Moll.* 87.

Hab. Atlantic Ocean.

4. STYLIOLA STRIATA.

Shell elongate, conical, ovate, inflexed, transversely striated, diaphanous, lucid, brittle, whitish; tip blunt; mouth and lips acute, equal.

Creseis striata, *Rang, Ann. Sc. Nat.* xiii. t. 17, f. 2, 1828; *D'Orb. Ram. Sagra Hist. Cuba Moll.* 87; *Desh. in Lamk. Hist.* ed. 2, 433; *Cantraine. Mem.* 32, t. 1, f. 10.

Hyalæa striata, *D'Orb. Voy. Am. Mer. Mol.* 122, t. 8, f. 23—25.

Cleodora striata, *Philippi, Sicil.* ii. 72; *Desh. in Lamk. Hist.* ed. 2, vii. 433.

Cleodore striée, *Voy. Bonite Moll.* t. 6, f. 1—4.

Creseis compressa, *Esch. Zool. Atlas*, iii. t. 15, f. 7, 1831.

Hab. Atlantic Ocean and Indian Seas.

5. STYLIOLA RECTA.

Shell very long, needle-like, conical, slightly bent, smooth, diaphanous, shining, brittle, whitish; apex acute, aciculate. Mouth circular.

Styliola recta, *Lesueur, in Blainv. Mon. Malac.* 1825.

Creseis aciculata, *Rang, Ann. Sc. Nat.* xiii. t. 17, f. 6, 1828; *D'Orb. Ram. Sagra Hist. Cuba Moll.* 88; *Desh. in Lamk. Hist.* ed. 2. vii. 434.

Hyalæa aciculata, *D'Orb. Voy. Am. Mer. Moll.* 123, t. 8, f. 29—31.

Creseis clava, *Rang, Ann. Sc. Nat.* xiii. t. 17, f. 5, 1828.

Cleodora clava, *Desh. in Lamk. Hist.* ed. 2, vii. 433.

Cleodora aciculata, *D'Orb. Moll. Canar.* 31; *Philippi, Sicil.* ii. 72; *Desh. in Lamk. Hist.* ed. 2, vii. 434.

Cleodore aciculée, *Voy. Bonite*, t. 6, f. 10, 17, t. 11, anat.

Creseis acus, *Eschsch. Zool. Atlas*, iii. t. 15, f. 2, 1831.

? Cleod. zonata, *Philippi, Sicil.* ii. 72, from *Chiage*, t. 82, f. 9, ined.

a—r. Shells. Sicily. Presented by A. Melly, Esq.

6. STYLIOLA TENUIS.

Creseis tenuis, *Wahl.*

Fossil.

7. STYLIOLA? VENTRICOSA.

Sheath straight at the back, slightly ventricose in front, tapering to a point, nearly smooth, with faint sloping lines of growth and a strong longitudinal furrow.

Creseis ventricosa, *Sharp, Quart. Jour. Geol. Soc.* ii. 314, t. 13, f. 3.

Fossil. Wenlock Flag-stone, Wales.

8. STYLIOLA? OBTUSA.

Sheath short and conical, sides slightly curved towards a blunt point, smooth (?), with a longitudinal furrow.

Creseis obtusa, *Sharp, l. c.* 314, t. 13, f. 4.

Fossil. Wenlock Rock, Wales.

9. STYLIOLA? GRACILLIMA.

Sheath very long, straight and slender, tapering gently to a point.

Creseis gracillima, *Sharp, l. c.* 314, t. 13, f. 5.

Fossil. Wenlock Rock, Wales.

10. STYLIOLA? PRIMÆVA.

Shell very long, linear, dilated towards the oral extremity, smooth or with indistinct traces of longitudinal grooves.—*Forbes.*

Sheath long, regularly tapering, smooth, with one (or more) longitudinal groove.—*Sharp.*

Creseis? primæva, *Forbes, Quart. Jour. Geol. Soc.* 1845, i. 146, f. 1; *Sharp, Quart. Jour. Geol. Soc.* ii. 314, t. 13, f. 2.

Fossil. Palæozoic Rock, Denbighshire.

11. STYLIOLA? SEDGWICKII.

Shell cylindrical, tapering, linear, marked with very numerous, fine, regular, transverse striæ; aperture dorsally angular.

Creseis? Sedgwicki, *Forbes, Quart. Jour. Geol. Soc.* 1845, i. 146, f. 2.

Fossil. Palæozoic Rock, Denbighshire.

7. THECA.

Shell fossil.

Theca, *Forbes, Quart. Jour. Geol. Soc.* ii. 314, t. 13, 1846; *Leonard & Bronn, Jahrb.* 1847, 634.

1. Theca Forbesii.

Sheath nearly flat behind, rounded in front, conical, and tapering to a point; aperture an obtuse-angled triangle, with the angles rounded off; surface finely striated, arched parallel to the edge of the mouth.

Theca Forbesii, *Sharp, Quart. Jour. Geol. Soc.* ii. 314, t. 13, f. 1.

Fossil. Ludlow Rock, middle part Kendal.

a. Fossil. Presented by S. Woodward, Esq.

2. Theca lanceolata.

Theca lanceolata, *Morris.*

Fossil. Palæozoic Rocks, New South Wales.

8. CONULARIA.

Shell quadrangular, with a longitudinal groove at each angle; sides regularly transversely striated. *Fossil.*

Conularia, *Muller, in Sow. Mon. Conch.* iii. t. 108, 1818, 1821, t. 260; *Brown, Leth.* 97, 1837; *Blainv. D. S. N.* xxxii. 193, 1824; *Malac.* 377, 622; *Flem. B. A.* 240, 1828; *Sow. Man.* ed. 2, 119; *D'Archiac & De Verneuil, Trans. Geol. Soc.* vi. 325, 1842; *D'Orb. Bull. Geol. France,* xiv. 563; *Austin, Ann. and Mag. N. H.* xv. 407, 1845; *Leon. & Bronn, Jahrb.* 1843, 639.

Sowerby, when he first described this genus, regarded it as allied to *Nautilus.* Fleming keeps it in the same situation. Blainville placed it with the *Orthocera.* Hœninghaus showed, in 1839, that it had no chambers, and Messrs. D'Archiac and De Verneuil referred it to *Pteropoda.* D'Orbigny formerly (*Voy. Amer. Merid. Moll.* 119, note) thought it was a *Pteropod,* but more lately he has regarded it as a *Heteropod.* I have sometimes thought it might be related to *Asterias:* it is placed here with great doubt.

The following species have been regarded as distinct:—

1. CONULARIA BRONGNIARTI.

Conularia Brongniarti, *D'Archiac & De Verneuil, Trans. Geol. Soc.* vi. 353, t. 31, f. 6, 1842.
C. calamitacea, *Sandb. in Bronn, Jahrb.* 1848, 18, t. 1, f. 9.

2. CONULARIA CANCELLATA.

Conularia quadrisulcata, *Sow. Mon. Conch.* iii. 107, t. 290, f. 3 (only); *in Murch. Silur. Syst.* ii. 626, t. 12, f. 22, *a*; *Vern. Bull. Geol.* 1840, xi. 177?; *Portl. Rep.* 393, t. 29, *a*, f. 3.
C. Sowerbyi, *Troost, Rep. Tenessee*, 1840, 53, not *Defr.*
C. cancellata, *Sandb. in Bronn, Jahrb.* 1847, 20, t. 1, f. 11.

a, *b*. Fossil.

3. CONULARIA PYRAMIDATA.

Conularia pyramidata, *Hoenh. Goldfuss in Dechen, Handl. Geol.* 538, 1832; *Bronn, Leth.* 1284.
C. quadrisulcata, *Bronn, Leth.* 97, t. 1, f. 12.
C. curvata, *Sandb. in Jahrb.* 1847, 23.

4. CONULARIA QUADRISULCATA.

Conularia quadrisulcata, *Miller, MSS.*; *Sow. Mon. Conch.* iii. 107, t. 260, f. 4 (only); *Geol. Trans.* v. 422? 492, t. 40, f. 2, *c*.
C. tubericosta, *Sandb. in Jahrb.* 1847, 21.

5. CONULARIA ACUTA.

Conularia acuta, *Roe, Hartz.* 36, t. 10, f. 12, var. f. 13.
C. ———, n. s., *Sandb. in Bronn, Jahrb.* 1845, 441.
C. carinata, *Sandb. in Bronn, Jahrb.* 1847, 14, t. 1, f. 2.

6. CONULARIA BUCHII.

Conularia Buchii, *Eichw. Silur.* 103.
C. Buchi, *Bronn, Index.*

7. CONULARIA SOWERBYI.

Conularia Sowerbyi, *Defr. in Blain. Malac.* 377, t. 14, f. 2, *b*, *e*; *Verneuil in Murchison's Russia*, ii. 348.
C. crenisulcata, *Sandb. in Bronn, Jahrb.* 1847, 19, t. 1, f. 10.

8. CONULARIA CURTA.

C onularia curta, *Sandb. in Bronn, Jahrb.* 1847, 14, t. 1, f. 1.
C. quadrisulcata, *Hist. Leth. Suec.* i. 30, t. 10, f. 5, not *Sow.*

9. CONULARIA DEFLEXICOSTATA.

Conularia quadrisulcata, *Sandb. in Jahrb.* 1849, 401, not *Sow.*
C. deflexicostata, *Sandb. in Jahrb.* 1847, 16, t. 1, f. 6.
C. ———, n. s., *Sandb. in Jahrb.* 1844, 175.

10. CONULARIA ELONGATA.

Conularia elongata, *Portl. Rep.* 393, t. 29, *a*, f. 2.
C. pectinicostata, *Sandb. in Jahrb.* 1847, 17, t. 1, f. 7.

11. CONULARIA GEROLSTEINENSIS.

Conularia Gerolsteinensis, *Arch. & Verneuil, Trans. Geol. Soc.* vi. 352, t. 31, f. 5.
C. tenuistriata, *Sandb. in Jahrb.* 1847, 15, t. 1, f. 3.

12. CONULARIA GERVILLEI.

Conularia Gervillei, *Arch. & Verneuil, Trans. Geol. Soc.* vi. 351, t. 29, f. 4.
C. tuberosa, *Sandb. in Jahrb.* 1847, 22.
Var.? C. subparallela, *Sandb. in Jahrb.* 1847, 16, t. 1, f. 4.

13. CONULARIA IRREGULARIS.

Conularia irregularis, *Kon. Carb.* 496, t. 45, f. 2.
C. quadrisulcata, *Kon. in D'Omal. Geol.* 516.
C. latisulcata, *Sandb. in Jahrb.* 1847, 16, t. 1, f. 5.

14. CONULARIA ORNATA.

Conularia ornata, *Arch. & Verneuil, Trans. Geol. Soc.* vi. 352, t. 29, f. 5.
C. serrata, *Sandb. in Jahrb.* 1847, 18, t. 1, f. 8.

** *Subcylindrical.*

15. CONULARIA ?? TERES.

Conularia teres, *Sow. Mon. Conch.* iii. 108, t. 260, f. 1, 2.

Fam. II. TRIPTERIDÆ.

Body elongate, cylindrical, divided into two distinct parts; the front part with two large lateral wings, united below to a flat central portion; the abdominal part cylindrical.

Shell cylindrical or subangular near the month, ending in an acute point, separated from the anterior cavity by an entire transverse septum; the tip is often deciduous in the adult.

Cuvieridæ, *Gray, Syn. Brit. Mus.* 1840; *Proc. Zool. Soc.* 1848, 204; *Agassiz, Nomencl.*

Hyalæidæ (part), *Cantraine, Moll. Medit.* 31, 1841.

Hyalidæ (part), *D'Orb. Moll. Cuba*, i. 70, 89, 1841.

"Intermediate between Cleodora and Pneumodermon," *D'Orb. Cuba*, 89.

1. TRIPTERA.

Triptera (Triptère), *Quoy & Gaim. Voy. Uranie*, 416, 1824 (wanting the shell); *Ann. Sci. Nat.* 1825, vi. 76, t. 2; *Blainv. Mal.* 478.

Cleodora *c.* Tripter, *Rang, Man.* 116, 1829; *Poit. & Mich. Gal.* i. 45.

Tripteris, *Menke, Syn.* ed. 2, 9, 1830, not *Lesson.*

Tripteres, *Gray, Syn. B. M.* 1842, 92.

Cuvieria (columnella), *Rang, Ann. Sci. Nat.* 1827, 320; *Isis*, 1829, 319; *Mon. Moll.* 116, 1829 (not *Decandolle* nor *Peron*); *Deshayes, Ency. Meth.* iii. 35, 1830; *Lamk. Hist.* ed. 2, vii. 430; *Guerin, Icon. Moll.* ii. 1843; *Bronn, Leth.* 985, 1838; *Sow. Gen. Shell.* t. ; *Conch. Man.* ed. 2, 130, 278, 1842; *Menke, Syn.* ed. 2, 9, 1830; *Benson, Jour. Asiat. Soc. Bengal*, 1835, 698; *Cuvier, Reg. Anim.* ed. 2, 1830; *Cantraine, Malac. Medit.* 31, 1841; *D'Orb. Moll. Cuba.* i. 70, 89; *Voy. Amer. Merid.* 124; *Desh. in Lamk. Hist.* ed. 2, vii. 435.

Cleodora (obtusa), part, *Quoy & Gaim. Voy. Uran.* t. 6.

Cresis (obtusa), part, *Rang, Ann. Sci. Nat.* xiii. 1828.

1. Triptera columnella.

Body glossy, anteriorly yellow coloured; wings oblong, anteriorly orange coloured. Shell elongate, cylindrical, swollen posteriorly, terminated anteriorly by an ovately transverse aperture, of a glossy appearance.

Cuvieria columnella, *Rang, Ann. Sc. Nat.* xii. 323, t. 45, B. f. 1—8, 1827.
Cuvieria columella, *D'Orb. Voy. Am. Mer. Moll.* 125, t. 8, f. 35—39; *Guerin, Icon. Reg. An. Moll.* t. 4, f. 10.
Cleodora obtusa, *Quoy & Gaim.? Voy. Uran.* t. 6, f. 5.
Creseis obtusa, *Rang, Ann. Sc. Nat.* xiii. t. 17, f. 4, 1828.
Cuvieria obtusa, *D'Orb. Ram. Sagra Hist. Cuba Moll.* 89; *Moll. des Canar.* 32 (1839).
Cuvierie colonnette, *Voy. Bonite Moll.*. t. 12, anat.
Cleodora columnella, *Desh. in Lamk. Hist.* ed. 2, vii. 435.

a—*c*. Coast of Brazil. Presented by Dr. Sinclair, R.N.

2. TRIPTERA ROSEA.

Body rose-coloured. Shell ——?

Triptera rosea, *Quoy & Gaim. Voy. Uranée*, 416, t. 66, 1824; *D'Orb. Voy. Amer. Merid.* 126, note; *Ann. Sci. Nat.* 1825, 76, t. 2, f. 5.

Hab. Port Jackson.—*Quoy.*

3. TRIPTERA ORYZA.

Shell smooth, shining, depressed, cylindrical; sides near the septum rather more ventricose; apex elongate, acute. Length $\frac{1}{10}$ths of an inch.

Cuvieria oryza, *Benson, Jour. Asiat. Soc. Bengal*, 1835, 698.

Hab. Tropical Indian Ocean.—*Benson.*

3. TRIPTERA ASTESANA.

Shell elongately cylindrical, truncated at the posterior extremity, terminated anteriorly with an oblique, somewhat triangular aperture, polished internally and externally, shining.

Cuvieria Astesana, *Rang. Ann. Sci. Nat.* xvi. 498, t. 19, f. 2.
Cleodora Astesana, *Desh. in Lamk. Hist.* ed. 2, vii. 434.

Fossil in Astesan.

FAM. III. CYMBULIADÆ.

Animal globular or ovate.
Fins 2, horizontal, opposite, on each side of the mouth, with a small intermediate lobe.
Shell cartilaginous, slipper-shaped, rarely wanting.

Cymbuliadæ, *Gray, Syn. Brit. Mus.* 1840; *Proc. Zool. Soc.* 1847, v. 204; *Agassiz, Nomen.*
Cymbulidæ, *Cantraine, Malac. Medit.* 33, 1841.
Pterobranchia, *b, Gray, Lond. Med. Rep.* 1821, 235.
Scpiacea, part, *Oken, Leherb.* 1815.
Hyalea, part, *Ferussac, Fab. Syst.* 25, 1821.
Hyaleacea, part, *Menke, Syst.* 4, 1828, ed. 2, 9, 1830.
Hyalidæ, part, *D'Orb. Moll. Cuba*, i. 70, 1841.

Synopsis of the Genera.

1. CYMBULIA. Shell slipper-shaped.
2. EURIBIA. Shell globular, membranaceous. Mouth round, spread out.
3. PSYCHE. Shell none? Body globular. Fins separate, lateral.
4. TIEDEMANNIA. Shell none? Fins forming a broad expanse.

1. CYMBULIA.

Shell gelatino-cartilaginous, oblong, slipper-shaped, covered with a thin, scarcely visible membrane; mouth elongate, truncated in front.—*Fins* large, rounded, with a small, elongate, intermediate lobe.

Cymbulia (proboscidea), *Peron & Lesueur, Ann. du Mus.* xv. 66, 1810; *Lamk. Extr. du Cour.* 1812; *Hist.* vi. 292, ed. 2, vii. 437; *Cuvier, Reg. Anim.* ii. 1817, ed. 2, 1830; *Schweigger, Naturg.* 750, 1820; *Deshayes, Ency. Meth.* iii. 42; *Ferussac, Tabl. Syst.* 25, 1821; *Rang, Man.* 113, 1829; *Blainv. Malac.* 481, 1825; *Latreille, Fam. Nat.* 1825; *Quoy & Gaim. Voy. Astrol.* ii. 373, 1832; *Van Beneden, Nouv. Mem. Acad. Brux.* xii.; *Menke, Syn.* 4, ed. 2, 8; *Zeitsch. f. Malak.* 1844, 77; *Cantraine, Malac. Medit.* 33; *D'Orb. Moll. Cuba*, i. 70, 1841; *Gray, Lond. Med. Rep.* 1821; *Scacchi, Antol. de Sci. Nat.* i. 72, 1841; *Sowerby, Gen. Shell.* t.

1. CYMBULIA PROBOSCIDEA.

Shell elongate, oblong, with several dentate longitudinal ridges.

Cymbulia proboscidea, *Peron & Lesueur, Ann. Mus.* 1810, xv. t. 3, f. 10—12, animal reversed; *Rang. Man.* 113.

Cymbulia Peronii, *Cuvier, Reg. Anim.* ii. 380; *Lamk. Hist.* ed. 2, vii. 438; *Cantraine, Mem.* 34; *Philippi, Sicil.* i. 102, ii. 72.
Cymbulie, *Blainv. Dict. Sci. Nat.* t. 59, f. 2; *Man. Malac.* t. f. 2, animal reversed.

a. Shell, dry. Mediterranean.
b. Animal and shell, in spirits. Mediterranean.
c. Animal and shell, in spirits. Sicily. Presented by A. Melly, Esq.

2. CYMBULIA OVATA.

Shell ovate, globose, subcartilaginous, soft, lucid, spined; wings lanceolate, reticulated, white.

Cymbulia ovata, *Quoy & Gaim. Voy. Astrol.* ii. 373, t. 27, f. 25—30; *Desh. in Lamk. Hist.* ed. 2, vii. 438.

Hab. Amboina.

3. CYMBULIA RADIATA.

Shell unknown; wings transverse, rounded, separated by a point in the middle, radiated with blackish points.

Cymbulia radiata, *Quoy & Gaim. Voy. Astrol. Moll.* ii. 375, t. 27, f. 33, 34; *Desh. in Lamk. Hist.* ed. 2, vii. 438.

Hab. Amboina.—*Quoy.*

4. CYMBULIA PUNCTATA.

Very small; wings ovately rounded, white, pointed with red.

Cymbulia punctata, *Quoy & Gaim. Voy. Astrol.* ii. 377, t. 27, f. 35, 36.

Hab. New Holland.

5. CYMBULIA NORFOLKENSIS.

Shell somewhat cartilaginous, ovate, spined, white; wings narrow, bilobed, connected together by a long point.

Cymbulia Norfolkensis, *Quoy & Gaim. Voy. Astrol.* ii. 376, t. 27, f. 31, 32; *Desh. in Lamk. Hist.* ed. 2, vii. 439.

Hab. South Seas, Norfolk Island.

2. EURIBIA.

Animal globular; wings 2, horizontal, opposite on each side of the mouth, and with a small intermediate lobe.—*Shell* cartilaginous, membranaceous, thin, transparent, regular, shaped like a hood; mouth round, spread out.

Euribia (hemispherica), *Rang*, *Ann. Sci. Nat.* 1827, xii. 328; *Man. Moll.* 117; *Desh. Ency. Meth.* iii. 121; *Oken*, *Isis*, 1829, 319; *Guerin*, *Iconog. Moll.* 12.

Eurybia (hemispherica), *Menke*, *Syn.* ed. 2, 9, 1830 (not *Hubner*, 1806, nor *Illiger*, nor *Boisduval*, nor *Eschscholtz*, 1829).

D'Orbigny observes he has never found the genera *Psyche* and *Euribia* of Rang; and he further remarks, "De petit godets absolument semblables a la coquille des *l'Euribie*, et transparens comme le sont les coquilles des *Pteropodes*, nous paruſent être, pendant quelque temps la Coquille de ce dernier genre, mais nous avons reconnu depuis que ce n'était que la partie cephalique d'un *Crustacé*, qui se detache avec beaucoup de facilité." *Voy. Amer. Merid. Moll.* 75.

1. EURIBIA HEMISPHERICA.

Animal white, rather transparent; fins oval, narrow at the base; mouth black; viscera brown. Shell very thin, flexible, spherical, yellow; mouth horizontal, very large.

Euribia hemispherica, *Rang*, *Ann. Sci. Nat.* xii. (1827), 329, t. 45, B, f. 9, 1011; *Guerin*, *Icon. Moll.* 12.

Hab. Atlantic Ocean.

2. EURIBIA GAUDICHAUDI.

Euribia de Gaudichaud, *Eydoux & Souleyet*, *Voy. Bonite Moll.* t. 14, f. 1, 6, not described.

Hab.

3. PSYCHE.

Body free, membranaceous, without any distinct head; tentacles none; wings 2, lateral, elongate, without any intermediate lobe.—*Shell* none (or very thin, membranaceous?)

Psyche, *Rang*, *Ann. Sci. Nat.* 1825, v. 284; *Man. Moll.* 117 (not *Linn.* 1735); *Isis*, 1827, 749; *Cuvier*, *R. A.* ed. 2; *Guerin*, *Icon. Moll.* 11: *Gray*, *Syn. B. M.* 1842; *Proc. Zool. Soc.* 1848.

1. PSYCHE GLOBULOSA,

Psyche globulosa, *Rang, Ann. Sci. Nat.* 1825, v. 284, t. 7, f. 1; *Man. Moll.* 117; *Guerin, Icon. Moll.* 11.

Hab. Isle St. Pierre, near Newfoundland.

4. TIEDEMANNIA.

Body gelatinous, transparent; neck elongated; tentacula 2; wings very large, cuneate, forming a disk; mouth below, surrounded by the lips.—*Shell* none.

Tiedemannia, *Chiage in Van Beneden, Nov, Mem. Acad. Brux.* xii. 21, 1839; *Chiage, Anim. Invert. Sicil.* i. 96, 1841; *Krohn. Arch. Naturg.* 1844, 324, t. 9, f. *a*, 1847, 36, t. 2, f. A; *Philippi, Sicil.* ii. 214; *Zeitsch. fur Mol.* 1844, 204.

Cymbulia sp., *Beneden, Mem. Ac. Brux.* xii.

? Gleba sp., *Forsk. Faun. Arab.* t. 43, D.

Differs from *Cymbulia* in the mouth being prolonged and having no shell.

1. TIEDEMANNIA NEAPOLITANA.

Tiedemannia Neapolitana, *Chiage, Anim. Invert.* 96, t. 32, f. 4, 7, 1841; *Philippi, Sicil.* ii. 215, 1844.

Tiedemannia creniptera, *Krohn in Erichs. Arch. Naturg.* 1844, 324, t. 9, f. *a; Erichs. Arch. Naturg.* 1847, 36, t. 2, f. A.

Cymbulia . . . . *Beneden, Nov. Mem. Acad. Brux.* xii.; *Ontologia di Sci. Nat. Napoli*, 1841, 81; *Isis*, 1843, 636; *Zeitsk. f. Malak.* 1844, 78.

Hab. Naples.

B. *Body and shell spiral. Operculum distinct, spiral.*

FAM. IV. LIMACINIDÆ.

Body spiral, sinistral; fin without any intermediate foot-like lobe.
Shell spiral, sinistral, with the mouth angularly produced on the columella side.
Operculum distinct, spiral (rarely wanting??).

Limacinidæ, *Gray, Syn. Brit. Mus.* 1840; *Proc. Zool. Soc.* 1847, 203.
Limacinadæ, *Forbes & Hanley, Brit. Moll.* ii. 379, 1849.
Pterobranchia, *a, Gray, Lond. Med. Rep.* 1821, 235.
Hyaleacea (part), *Menke, Syn.* 4, 1828, ed. 2, 8, 1830.
Hyaleæ (part); *Rang. Mon.* 113, 1829.
Atlantarum (part), *Deshayes, Ency. Meth.* iii. 343, 1830.
Hyalidæ (part), *D'Orb. Moll. Cuba*, i. 70, 1841.
Limacinæ (Les Limacines), part, *Feruss. Fab. Sys.* 25, 1821 (not *Swainson*, nor *Blainv.*)
Pterobranchia (part), *Gray, Lond. Med. Rep.* 1821.
Procephala (part), *Lat. Fam. Nat.* 1825.
Atlantidæ (part?), *Gray, Proc. Zool. Soc.* 1848, 149.

These animals have been confounded, by D'Orbigny and others, with *Atlanta*, which has a compressed foot with a sucker on the hinder edge, a distinct head, and no lateral fins.

Eschscholtz's figure of *Steira* (*Isis*, 1825, t. 5, f. 3) appears to combine the two fins of *Limacina* with the head, tentacles, eyes, and shell of *Atlanta*. It is most probably only a bad figure of that genus as it has not been observed by any succeeding zoologist. He placed it in the same family with *Limacina*.

1. LIMACINA.

Animal elongate, spiral; head indistinct; mouth at the union of the two fins and intermedial lobe, with two small labial swellings; fins 2, elongate, rounded, united at their base by an intermediate semicircular lobe, bearing an *operculum*; mantle large, open in front, forming a large gill cavity; gills in the mantle; vent on right side of mantle.—*Shell* univalve, spiral, sinistral, containing the animal; operculum vitreous, thin, transparent, spiral, of few whorls with a central muscular scar. (See *D'Orb. Amer. Merid.* t. 12, f. 24 and 39).

Limacina, (helicinalis), *Cuvier, Reg. Anim.* iii. 1817; *Lamk. Hist.* vi. 290, 1819, ed. 2, vii. 435; *Schweigger, Naturg.* 750, 1820; *Gray, Lond. Med. Rep.* 1821; *Ferussac, Fab. Syst.* 25, 1821; *Menke, Syn.* 4, 1828, ed. 2, 8, 1830; *D'Orb. Moll. Cuba*, i. 70, 1841; *Rang, Man.* 113, 1829; *Eschs. Isis*, 1825, 735; *Desh. E. M.* iii. 343; not *Hartmann*, 1821; nor *Wiegmann*, 1832; nor *Gray*; nor *Sowerby, Genera*, fig. so named is Atlanta.

Spiratella (limacina), *Blainv. Dict. Sci. Nat.* xxxii. 284, 1825; *Man. Malac.* 494, 1825; *Desh. Ency. Meth.* iii. 471; *Sow. Conch. Man.* 100, ed. 2, 263.
Kronjacht, *Oken, Lehrb. Nat.* 1817.
Argonauta sp., *O. Fab.*
Clio sp., *Phipps; Gmelin, S. N.*
Heterofusus (retroversus), *Fleming, Brit. Anim.* 498, 1833; *Gray, Proc. Zool. Soc.* 1848, 149.
Peracle (Flemingii), *Forbes, Rep. Brit. Ass.* 1843, 132, 249.
Scæa (retroversus), *Philippi, Moll. Sicil.* ii. 164, 1844.
Helicophora, *Gray, Syn. B. M.* 1840, 1844, 59.
Atalanta (sub-genus Heliconoides), *D'Orb. Voy. Amer. Merid. Moll.* 174, 184.
Spirialis (Les Spiriale), *Eydoux & Souleyet, Rev. Zool. Soc.* 1840; *Cuvier*, 235; *Weigm. Arch.* 1841, ii. 265; *Gray, Proc. Zool. Soc.* 1847, 203; *Loven, Ind. Moll. Scand.* 4, 1846; *Forbes & Hanley, Brit. Moll.* ii. 382.
Heliconoides, *D'Orb.; Gray, Proc. Zool. Soc.* 1848, 149.
Limacina sp., *Benson, Jour. Asiat. Soc. Calcut.* 1835, 176.
Campylonaus, *Gray, Proc. Zool. Soc.* 1848, 149, not *Benson.*
Fusus sp., *Fleming, Wern. Trans.* iv. 498; *Brit. Anim.* 349.

Limacina, so well described by O. Fabricius and other arctic zoologists, appears to have been only known to Swedish, Danish and English naturalists. Moller, who well knew the type, has lately added to the genus a turrited species. These two species are the giants of the genus. The more minute species of the Atlantic and Pacific Oceans have been described as a different genus, under various names, by several authors. D'Orbigny thought *Limacina* (*arctica*) might be a badly preserved *Atlanta* (*Voy. Amer. Merid. Moll.* 75): he first noticed, figured and described the smaller species (*Voy. Amer. Merid.* t. 12, f. 24), and also first figured the operculum, but he thought some species were without any; and though he described the colour of the animal, he appears never to have seen them expanded, as he regards the genus as a section of *Atlanta*, which has a very different kind of animal. I have not been able to find the operculum on our specimens of the arctic species, but they are in a very broken condition. Chemnitz, Fleming and Philippi arranged the more turrited species with or near the *Fusi* or *Pleurotomæ*: they differ from the shell of the very young *Carinariæ Atlantæ* (see *D'Orb. Amer. Merid. Moll.* t. 11, f. 7—9) in the shell being reversed.

Limacina arctica occurs in immense quantities in the North Seas, but rarely out of the sight of land.—*Scoresby.*

* *Spire subglobose, depressed; axis umbilicated.* Limacina.

1. LIMACINA ARCTICA.

Shell subglobose, subdiscoidal; spire slightly raised; whorls 6, last large, with a very obscure keel; axis umbilicated, keeled on the edge. Diam. $\frac{3}{8}$ths of an inch.

Limacina arctica, *Loven, Moll. Scand. Kong. Vetensh. Akad.* 1847, 188, t. 3, f. 6.

Argonauta Argo, *Muller, J. Dan. Prod.* 2877.

Clione Helicina, *Pallas, Spic.* x. 38.

Clio helicina, *Gmelin, S. N.* 3149; *Phipps, Voy. North*, 195; *Roissi, Buff. Moll.* v. 59? *Scoresby, Arct. Reg.* i. 543, t. 16, f. 11, 12, not good.

Limacina arctica, *Sow. Man.* f. from *Scoresby; Leach, in Ross Voy. Baffin's Bay*, i. 172, 1819.

Limacina helicinalis, *Lamk. Hist.* No. 1, ed. 2, vii. 436; *Sow. Gen.* f. 3.

Limacine, *Cuvier, Reg. Anim.* ii. 380.

Argonauta arctica, *O Fab. F. Groenl.* 386; *Ross, Voy. South and Antarct. Reg.* ii. 143?

Spiratella limacina, *Blainv. D. S. N.; Malac.* t. 48, f. 5, from *Scoresby.*

Spiratella arctica, *Desh. Ency. Meth.* iii. 971.

a. b. Animal, in spirits. N. Sea. Arctic Expedition. Presented by Colonel Sabine.

c, d. Animal, in spirits. Greenland. From Mr. Moller's collection.

2. LIMACINA INFLATA.

Shell very thin, transparent, vitreous, discoidal, sinistral; axis umbilicated; spire scarcely exceeding the last whorl; whorls 3, smooth, rather large, modified by the penultimate whorl, heart-shaped; peristoma disunited, nicked on each side, and with an elongated, strong, slightly arched beak in front; operculum glassy, very thin, transparent, few whorled.

Spiriale rostrale, *Eydoux & Souleyet, Voy. Bonite Moll.* t. 15, f. 1—10.

Spiralis rostralis, *Eydoux & Souleyet, Rev. Zool. Soc. Cuvier*, 1840, 235.

? Atlanta inflata, *D'Orb. Voy. Amer. Merid.* t. 12, f. 16—19, not good.

3. LIMACINA JEFFREYSII.

Shell subdiscoidal, spire much depressed; whorls, three last large, rounded; lips very acute, mucronated.

Spirialis Jeffreysii, *Forbes and Hanley, Brit. Moll.* ii. 386.

Hab. British Channel. Coll. MR. Jeffreys.

3. LIMACINA ROTUNDA.

Shell subdiscoidal, smooth, umbilicated; spire rather convex, slightly raised; last whorl moderately swollen; mouth moderate, roundish.

Atlanta (Heliconoides) rotunda, *D'Orb. Voy. Amer. Merid. Moll.* t. 12, f. 20—24.

Hab. Atlantic Ocean.

5. LIMACINA VENTRICOSA.

Shell globular, ventricose, thin, glassy, sinistral; axis largely umbilicated; spire conical, short; whorls 4, last swollen, much larger than the others; mouth large, oblique, angular; peristome sharp-edged, not united, forming an angular projection below the arched columella.

Spirialis ventricosa, *Eydoux et Souleyet, Rev. Zool.* 1840, 236; *Forbes and Hanley, Brit. Moll.* 385.

Spiriale ventre, *Eydoux et Souleyet, Voy. Bonite Moll.* t. 15, f. 11—16.

Atlanta Rangii, (Atlantes de Rang), *D'Orb. Voy. Amer. Merid.* t. 12, f. 25—28.

Var. smaller; umbilicus less open; whorls fewer; mouth more regular and less angular.—*Eydoux & Souleyet.*

Hab. Atlantic Ocean.

6. LIMACINA AUSTRALIS.

Shell turbinate, thin, brittle, sinistral, rather largely umbilicated; spire elevated, conical; whorls 6 or 7, separated by a deep suture; mouth oblique, irregularly quadrilateral, rather angular; peristoma not united; columella straight.

Spirialis australis, *Eydoux et Souleyet, Rev. Zool. Soc. Cuvier,* 1840, 237.

Spiriale australe, *Eydoux et Souleyet, Voy. Bonite Moll.* t. 15, f. 20—26.

Hab. Cape Horn.

** *Shell conical, turrited; spire elongate; axis unperforated.*
Heterofusus.

7. LIMACINA RETROVERSA.

Shell conical; whorls 4, last very ventricose, more than half the length of the shell.

Chemn. Conch. Cab. ix. 129, t. 113, 6972, 973?
Fusus retroversus, *Fleming, Wern. Mem.* iv. 498, t. 15, f. 2; *Brit. Anim.* 349; *Treat. Moll. Anim.* t. 12, f. 45; *Thorpe* (Hanley), *Brit. Man. Conch.* 201.
Heterofusus retroversus, *Flem. l. c.* 498.
Peracle Flemingii, *Forbes, in Thompson Rep. Brit. Ass.* 1843, 249; *Jeffreys, Ann. Nat. Hist.* xxx. 1847, 16.
? Scæa stenogyra, *Philippi, Moll. Sicil.* ii. 164, t. 25, f. 20.
? Peracle physoides, *Forbes, Rep. Brit. Ass.* 1843, 132.
Spirialis Flemingii, *Forbes & Hanley, Brit. Moll.* 384, t. 57, f. 4, 5.
Scæa retroversa, *Philippi, Sicil.* ii. 164, from *Fleming.*

Hab. North Sea.

a—d. North Sea. From Mr. Damon's collection.

8. LIMACINA TROCHIFORMIS.

Shell thin, glassy, very transparent, top-shaped, swollen, sinistral, unperforated; spire moderate, conical; whorls 5, rapidly decreasing in size, the last very large, swollen; mouth oblique, oval; columella smooth and slightly arched; fins moderate, rounded at the end.

Atlanta trochiformis, *D'Orb. Voy. Amer. Merid.* t. 12, f. 29—31.
Spirialis trochiformis, *Eydoux et Souleyet, Rev. Zool. Soc. Cuvier,* 1840, 237.
Spiriale trochiforme, *Eydoux et Souleyet, Voy. Bonite Moll.* t. 15, f. 27—34.

Var.? Shell rather more elongate; fins elongate, acute.

Hab. China.

9. LIMACINA MACANDREI.

Shell turrited, fusiform; whorls 5, gradually enlarging, last not so long as the spire; mouth elliptical, rather narrow.

? *Chemn. Conch. Cab.* ix. 128, t. 113, f. 971, broken.
? Turbo lunaris, *Gmel. S. N.* i. 3587, from *Chemn.*

? Scæa lunaris, *Philippi, Moll. Sicil.* ii. 164, from *Chemn.*
Spirialis MacAndrei, *Forbes & Hanley, Brit. Moll.* ii. 385, t. 57, f. 6, 7.

Hab. North Sea.

10. LIMACINA BALEA.

Shell turrited; whorls 7; spire prominent; apex acute.

Limacina balea, *Moller, Moll. Groenl.* 4.
Spirialis stenogyra, *Loven, Moll. Scand.* 4?

a, b. Animal, in spirits. Groenland. From Mr. Moller's collection.

11. LIMACINA BULIMOIDES.

Shell thin, diaphanous, glossy, elongate, not umbilicated, sinistral; spire high; whorls 6; apex acute; mouth irregular, quadrilateral, angular in front.

Atalanta bulimoides, *D'Orb. Voy. Amer. Merid.* t. 12, f. 36, 38 (not good).
Spirialis bulimoides, *Eydoux et Souleyet, Rev. Zool. Soc. Cuvier,* 1840, 238; *Forbes and Hanley, Brit. Moll.* ii. 386.
Spiriale bulimoide, *Eydoux et Souleyet, Voy. Bonite Moll.* t. 15, f. 35, 42.

Hab. Atlantic and Indian Oceans.

12. LIMACINA CLATHRATA.

Shell very thin, brittle, oblong, swollen, sinistral, not umbilicated, covered, regular, cancellated, longitudinal and transverse striæ; spire slightly elevated; whorls 3 or 4, last swollen, much larger than the others; suture deep; mouth large, elongate, strongly angular in front; columella smooth, arched.

Spiriale reseau, *Eydoux et Souleyet, Voy. Bonite Moll.* t. 15, f. 17—19.
Spirialis clathrata, *Eydoux et Souleyet, Rev. Zool. Soc. Cuvier,* 1840, 239.
Atlanta reticulata (Atlantes en reseau), *D'Orb. Voy. Amer. Merid.* t. 126, 32—35, and 39 operculum.

Hab. Atlantic and Pacific Oceans.

ORDER II. GYMNOSOMATA.

Body naked, without any shell.
Head distinct.
Wings 2 or 4, at the junction between the head and the body, with a central intermediate lobe or rudimentary foot.
Gills exterior.

Pteropodia oligoptera, part, *Rafin. Anal. Nat.* 1815.
Clionidia, *Rafin. Anal. Nat.* 1815.
Gymnosomata, *Blainv., Rang, Mann. Moll.* 117.
Gymnosoma, *Blainv. Malac.* 482, 1825.
Pterobranchia, § *c*, *Gray, Med. Repos.* 1821, 235.
Procephalis, *Latreille, Fam. Nat.* 1825.
Pneumodermi, *D'Orb. Moll. Cuba*, i. 70, 1841.
Les Clios, *Rang, Man. Moll.* 117.
Cliodinæ, *Menke, Syn.* 5, 1828.
Clioidæ, *Menke, Syn.* ed. 2, 9, 1830; *Wiegm. Hand. Zool.* 517, 1842.
Clionina, *Bronn, Gesch. d. Naturg.* iii. 353.
Acephales, part, *Blainv. Bull. Soc. Phil.* 1814, 179.

FAM. V. CLIONEIDÆ.

Animal fusiform. Head with a series of conical prominences on each side. Wings 2, with a central foot-like appendage.
Clionidea, part, *Rafin. Anal. Nat.* 1815.
Clionea, *Oken, Lehrb.* 1815.
Cliones (Les Clios), *Ferussac, Tabl. Sys.* 25, 1821; *Rang, Man. Moll.* 117, 1829.
Clionidæ, *Gray, Syn. Brit. Mus.* 1840; *Proc. Zool. Soc.* 1847.
Cliodinæ, part, *Menke, Syn.* 5, 1828.
Clioidæ, part, *Menke, Syn.* ed. 2, 9, 1830; *Wiegm. Handb. Zool.* 517, ed. 2, 545.
Mollusca nuda nageant, part, *Latr. Dict. Hist. Nat.* xxiv. 109, 1804.

Synopsis of the Genera.

1. CLIONE. Head indistinct. Tentacula distinct.
2. CLIODITA. Head distinct. Tentacula not apparent.

1. CLIONE.

Head indistinct; tentacula 6, conical, three on each side.—*Tooth* of lingual membrane, broad, convex behind, slightly two-lobed and denticulated in front; lateral teeth 12-12, simple, arched, rather swollen at the base, the outer ones gradually smaller.—*Loven, l. c.* t. 3, f. 4.

In swimming it brings the top of its fins almost in contact, first on one side and then on the other.—*Scoresby, Arct. Reg.* 544.

Clione, *Pallas, Spicil. Zool.* x. 28, 1774; *Gmelin, S. N.* ed. 13, 3148; *Moller, Ind. Moll. Groenl.* 4, 1842; *Rafin. Anal. Nat.* 1815.

Clio, *O. F. Muller, Zool. Dan. Prod.* 29, 1776 (not *Browne*, 1756); *O. Fab. Faun. Groen.* 334, 1780; *Brug. E. M.* i. 505, 1789; *Peron & Lesueur, Ann. du Mus.* 1810; *Lamk. Syst. Anim.* 62, 1801; *Ext. du Cours.* 1812; *Phil. Zool.* 1809; *Hist. A. S. V.* vi. 286, 1819, ed. 2, vii. 423; *Cuvier, Anal. Comp.* 1800; *Ann. Mus.* i. 242, 1802; *Ann. Mus.* 1804; *Reg. Anim.* 1817, ed. 2, 1830; *Blainv. Dict. Sc. Nat.* ix. 404; *Malac.* 482, 1825; *Rang, Man.* 118, 1829; *D'Orb. Moll. Cuba*, i. 70, 1841.

? Amphirea, *Rafin. Anal. Nat.* 1815, no character or type.

? Dicroptera, *Rafin. Anal. Nat.* 1815, no character or type.

1. CLIONE BOREALIS.

Gelatinous, pellucid, pale blue; mouth and end of the body scarlet out of water, hyaline; wings somewhat triangular; tail acute.

Ataursak, *Crantz, Groen.* 142.

See Gottes Pferd, *Adelung Gesch.* 410, t. 17, f. 18.

Clio papilionacea, *Pallas, Spic. Zool.* x. 28, t. 1, f. 18, 19.

Clio borealis, *Brug. E. M.* n. 1; *E. M.* t. 75, f. 3, 4; *Cuvier, Ann. du Mus.* i. t. 17; *Roissi, Buffon, Moll.* v. 68, t. 52, f. 1; *Lamk. Hist.* ed. 2, vii. 425; *Eschricht, Vidensk. Selsk. Nat.* 1838; *Leach, in Ross, Baffin Bay*, 122; *Loven, Ind. Moll. Scand.* i.; *Kong. Vet. Akad.* 1847, 188, t. 3, f. 4.

Clio retusa, *Muller, Zool. Dan. Prod.* 274, 2, not *Linn.; Fab. Faun. Groenl.* 334.

Clio Limacina, *Phips, Ellis, Zooph.* t. 15, f. 9, 10.

Clio Borealis or C. Limacina, *Scoresby, Arct. Reg.* i. 544, ii. 556, t. 16, f. 10, from life.

Clio Miquelonensis, *Rang, Ann. Sci. Nat.* 1825, v. 285, t. 7, f. 2; *Desh. in Lamk. Hist.* ed. 2, vii. 425.

a—c. In spirits. Baffin's Bay. Presented by Colonel Sabine.
d—f. In spirits. Greenland. From Mr. Moller's collection.

2. CLIONE AUSTRALIS.

Fleshy, of a rose colour; wings lanceolate; tail compressed, bilobed.

Clio australis, *Brug. Ency. Meth.* n. 2. t. 75, f. 1, 2; *Roissi, Buffon, Moll.* v. 69; *Lamk. Hist.* ed. 2, vii. 425; *Blainv. Malac. Moll.* t. 86, f. 1, 2.

Hab. India.

3. CLIONE CAUDATA.

Clio à longue queue, *Eydoux & Souleyet, Voy. Bonite Moll.* t. 14, f. 17—21.

Hab.

Capt. Ross (*Antarctic Voy.* i. 169) mentions *Clio borealis* and *Argonauta arctica* as abundant between lat. 63° and 64° south: they are probably distinct from the arctic species.

2. CLIODITA.

Tentacula not apparent; head separated from the trunk by a contraction.

Cliodita (Cliodit), *Quoy & Gaim. Voy. de Freyc. Zool.* 413, 1824; *Isis*, 1827, 1012; *Ann. Sci. Nat.* vi. 74, t. 2, f. 825; *Menke, Syn.* ed. 2, 9, 1830.

Clio sp., *Rang, Man.* 118, 1829; *Blainv. Malac.* 483; *Desh. in Lamk. Hist.* ed. 2, vii. 426, 1836.

1. CLIODITA CADUCEUS.

Body elongated, blunt behind; head very small, hooded.

Cliodita caduceus, *Quoy & Gaim. Ann. Sci. Nat.* 1825, vi. 74, t. 2, f. 2; *Voy. Uranie*, t. 66; *Desh. in Lamk. Hist.* ed. 2, vii. 426.

Hab. Cape of Good Hope.

2. CLIODITA FUSIFORMIS.

Body fusiform, blackish; wings somewhat triangular, transparent, extended; posterior extremity acute; head very small, without tentacula.

Cliodita fusiformis, *Quoy & Gaim. Ann. Sci. Nat.* 1825, 75, t. 2, f. 3, 4; *Voy. Uranie*, t. 66.
Clio fusiformis, *Desh. in Lamk. Hist.* ed. 2, vii. 427.

Hab. Cape of Good Hope.

3. CLIODITA PYRAMIDALIS.

Body elongate, pyramidal, white, pointed with brown; wings oval; head rounded, two-lobed.

Clio pyramidalis, *Quoy & Gaim. Voy. Astrol.* ii. 371, t. 27, f. 37; *Desh. in Lamk. Hist.* ed. 2, vii. 426.

Hab. Amboina.—*Quoy & Gaim.*

FAM. VI. PNEUMODERMIDÆ.

Body fusiform. Head with arms furnished with pedicellate suckers. Wings 2, entire, with a central foot-like appendage placed at the base of the head. Gills on the hinder part of the body.

Pneumodermidæ, *Gray, Syn. Brit. Mus.*, 1842, 86, 92; *Proc. Zool. Soc.* 1847, 204.
Pterobranchia, § *c*, *Gray, Med. Repos.* 235.
Pneumodermi, part, *D'Orb. Moll. Cuba*, i. 70.
Pneumodermes (Pneumoderma), *Ferussac, Fab. Syst.* 15, 1821.
Cliodinæ, part, *Menke, Syn.* 5, 1828.
Clioidæ, part, *Menke, Syn.* ed. 2, 9, 1830; *Wiegm. Handb. Zool.* 517 (1842), ed. 2, 545.
Pneumodermitæ (Pneumodermites), *Latr. Fam. Nat.*
Pneumonodermoidæ, *Agassiz, Nomencl.*

Synopsis of the Genera.

1. PNEUMODERMON. Gills lobed, at the hinder part of the body.
2. SPONGIOBRANCHIA. Gills a prominent spongy ring, near end of body.
3. TRICHOCYCLUS. Gills a ciliated ring, round the middle of the body.
4. PELAGIA. Gills ——? Body transparent, tubercular.

1. PNEUMODERMON.

Gills in a four-lobed leaf at the extremity of the body.

Pneumodermon (Pneumoderme), *Cuvier*, *Ann. Mus.* 1804, iv. 228; *Reg. Anim.* ii. 38, 1817, ed. 2, 1830; *Lamk. Phil. Zool.* 1809; *Hist. A. S. V.* vi. 293, 1819, ed. 2, vii. 439; *Rang*, *Man.* 118.
Pneumoderma, *Peron et Lesueur*, *Ann. du Mus.* 1810; *Gray*, *Lond. Med. Rep.* 1821; *Blainville*, *Dict. Sci. Nat.* xxxii. 274, 1824; *Malac.* 483; *Rafin: Anal. Nat.* 1815.
Pneumonoderma, *Agassiz.*
Pneumodermum, *Verany*, *Cat. A. Invert.* 17, 1846.
Pneumodermis, *Oken*, *Lehrb. Nat.*
Pneumonodermum, *Herrmannsen*, *Ind.* 309.
Ægle, *Oken*, *Lehr. Zool.* 1816 (see *Blainv. Malac.* 55).
Eglæa, "*Oken*" *in Deshayes*, *Ency. Meth.* ii. 7 (misprint).

1. PNEUMODERMON CUCULLATUM.

Body oblong.

Pneumoderma Capuchonne, *Peron et Lesueur*, *Ann. Mus.* 1810, xv. 65.
Pneumoderme, Pneumodermon, *Cuvier*, *Ann. Mus.* iv. 228, t. 59; *Anat. Moll.*; *Regn. Anim.* ii. 330; *Blainv. Malac.* t. 46, f. 4; *Desh. E. M.* iii. 802.
Pneumodermede de Peron, *D'Orb. Voy. Amer. Merid.* 129; *Voy. Bonite Moll.* t. 14, f. 7, 16.
Pneumoderma Peronii, *Lamk. Hist.* ed. 2, vii. 441; *Quoy et Gaim. Voy. Astrol.* t. 28, f. 1—6?

Hab. Atlantic Ocean.

2. PNEUMODERMON RUBRUM.

Body pupaform, elongated, fuscous; head red; wings very small, somewhat rounded.

Pneumodermon ruber, *Quoy & Gaim. Voy. Astrol.* ii. 389, t. 20, f. 19, 20; *Desh. in Lamk. Hist.* ed. 2, 441.

Hab. Amboina.

3. PNEUMODERMON PELLUCIDUM.

Body cylindrical, turbinated, elongated, soft; head with very small rounded wings.

Pneumodermon pellucidus, *Quoy & Gaim. Voy. Astrol.* ii. 390, t. 28, f. 25.

Hab. Amboina.

4. PNEUMODERMON VIOLACEUM.

Body oblong, violet; suckers large, pedunculated, foot-like; appendages pear-shaped, elongate; fins rounded; whorls moderate; gills 2-lobed, quadrangular.

Pneumodermon violaceum, *D'Orb. Voy. Am. Mer. Moll.* 129, t. 9, f. 10—15.

Clio capensis, *Rang, Ann. Sci. Nat.* vi. 1825, 286, t. 7, f. 3, 4; *Desh. in Lamk. Hist. A. S. V.* ed. 2, vii. 426.

Hab. South Ocean.

2. SPONGIOBRANCHIA.

Body fusiform; wings 2, entire, with a foot-like appendage; gills in a prominent spongy ring, on the end of the body.

Spongiobranchea, *D'Orb. Amer. Merid.* (1840), 132, t. 9, f. 1; *Moll. Cuba*, i. 70, 1841.

Spongobranchia, *D'Orb. Paleon. Franc. Cret.* ii. 1842; *Gray, Syn. Brit. Mus.* 1842, 92.

1. SPONGIOBRANCHIA AUSTRALIS.

Body elongate, violet-brown; head rounded; mouth white; proboscis elongate, with two acute appendages; suckers 6, nearly sessile, on a long appendage; foot acute; fins oblong, striated; whorls spotted.

Spongiobranchea australis, *D'Orb. Voy. Amer. Merid.* 132, t. 9, f. 1, 6.

Hab. Atlantic Ocean, near Falkland Islands.

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2. SPONGIOBRANCHIA ELONGATA.

Body very much elongated, fusiform, pointed behind, brown-violet; head narrow; mouth white, with long appendages; fins round, white, small; gills white.

Spongiobranchea elongata, *D'Orb. Voy. Am. Mer. Moll.* 132, t. 9, f. 8, 9.

Hab. Atlantic Ocean.

3. TRICHOCYCLUS.

Head produced, conical, with two lateral tentacles.—*Body* elongate; fins 2, oblong, lateral, with a lanceolate intermediate lobe; gills in a ciliated ring round the middle of the abdomen, and with a similar ring round the base of the head and on the hinder end of the body.

Trichocyclus, *Eschsch. Isis*, 1825, 735, t. 5, f. 4; *Menke, Syn*, ed. 2, 9; *Gray, Syn. B. M.* 1842, 86, 92; *Proc. Zool. Soc.* 1847, 204.

1. TRICHOCYCLUS DUMERILII.

Body oblong, cylindrical, truncate; fins broad, rounded. Length 1 line.

Trichocyclus Dumerilii, *Eschsch. Isis*, 1825, 735.

Hab. South Sea.

4. PELAGIA.

Animal gelatinous, rough, transparent.—*Body* oval elongate, contracted in the middle; head indistinct, with two small tubercles; mouth hidden; fins 2, lateral, at the contraction of the body; vent at the base of the right fin; nerves very apparent.

Pelagia, *Quoy & Gaim. Voy. Astrol.* ii. 392, 1832, not *Peron & Lesueur*, 1809, nor *Lamx.* 1821; *Menke, Zeitsch. f. Malak.* 1844, 42.

1. PELAGIA ALBA.

Body elongate, fusiform, white-netted, rough; fins submedial, rounded, striated.

Pelagia alba, *Quoy & Gaim. Voy. Astrol.* 392, t. 27, f. 7—9.

Hab.

Fam. VII. CYMODOCIDÆ.

Body divided into two parts. Wings 4, two on each side, at the junction between the head and abdomen, with a foot-like appendage. Gills —— ?

Cymodoceadæ, *Gray*, *Syn. Brit. Mus.* 1840; *Proc. Zool. Soc.* 1847, 204; *Agassiz*, *Nom.*

Pneumodermidæ, part, *D'Orb. Moll. Cuba*, i. 70, 1841; *Pal. Franc.* ii. 1842.

Cymodoceidæ, *Gray*, *Syn. B. M.* 1848, 88.

1. CYMODOCEA.

Character of the family.

Cymodocea, *D'Orb. Voy. Amer. Merid.* 133, t. 9, f. 16, 17; *Moll. Cuba*, i. 70, 1841; *Pal. Franc.* ii. 1842, not *R. A. Salisbury*.

1. Cymodocea diaphana.

Body elongate, diaphanous, translucent, showing the violet viscera; fins, upper pair broad, ovate, lower edge thickened, lower pair narrow, digitated; medial appendage elongate, angular, nearly at the tip,

Cymodocea diaphana, *D'Orb. Voy. Amer. Merid.* 133, t. 9, f. 16, 17.

Hab. Atlantic Ocean.

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Edward Newman, Printer, 9, Devonshire Street, Bishopsgate.

CATALOGUE

OF THE

MOLLUSCA

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

PART IV.

BRACHIOPODA ANCYLOPODA,

OR

LAMP SHELLS.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.
1853.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

PREFACE.

THE chief objects in forming the present Synoptical Catalogue have been, to exhibit at one view a complete list of all the specimens of BRACHIOPODOUS MOLLUSCA in the British Museum Collection, and to furnish such an account of the species known to exist in other collections, but which are at this time desiderata in the British Museum, as the materials at hand would permit me to compile, in order to enable travellers, collectors, and others, to assist in completing the national collection.

For this purpose, short descriptions have been given of all the genera and species of recent Brachiopoda now known to exist in the different museums and private collections, and of the better-known fossil species of the various fami-

lies. At the end of each description is added the country, or strata, and other peculiarities of each species mentioned.

Great attention has been paid to dates, and the generic and specific names which appear to possess priority in this respect have been adopted.

Reference has also been made to the works in which the genera and species appear to have been first described or noticed.

Mr. S. P. WOODWARD has kindly assisted in the preparation of the Catalogue, especially as regards the fossil species, and in drawing the illustrations, which have been engraved by MISS ANN WATERHOUSE of the School of Design.

JOHN EDWARD GRAY.

January 11th, 1853.

CATALOGUE

OF

BRACHIOPODA OR LAMP-SHELLS

IN

THE BRITISH MUSEUM.

Class II. BRACHIOPODA.

Shell inequivalve, equilateral, attached by a muscular peduncle, or by the surface of one valve, or free; *valves* applied to the dorsal and ventral sides of the animal, united by muscles and mostly articulated by teeth; *dorsal valve** usually smallest, always free, furnished internally with sockets for the hinge-teeth, and with shelly processes† for the support of the animal; *ventral valve* usually largest, and with its umbo produced and perforated for the passage of the peduncle, frequently attached by its outer surface, and generally provided internally with two prominent teeth; *periostracum* thick, sometimes developed into concentric lamellæ.

Animal furnished with elongated labial appendages, or *oral arms*, which are free or united by membrane and variously folded,

* What is here called the *dorsal* valve has often been called the *lower* valve, being usually below when the animal is in its natural position attached to marine bodies; but it has been found to cover the back of the animal.

† Sometimes termed an "internal skeleton" or "apophysary system."

being usually spiral, and having their outer margin fringed with *cirri*; mantle-lobes closely applied to the valves, fringed with horny *setæ*, and furnished with large branching veins; digestive organs occupying a small space near the umbones, separated by a strong membrane from the general cavity of the shell in which the cirrated arms are expanded; respiration performed by the vessels of the mantle; circulation effected by two hearts, each having an auricle and a ventricle; sexes united?; ova developed in vascular sinuses, or in the large veins.

Habit marine, ranging from low water to 100 fathoms; in all climates and seas (*Woodward MS.*).

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Acephala Palliobranchiata or Brachiopoda, *Forbes & Hanley, Brit. Moll.* ii. 339.
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Multivalves, part., *Megerle, Berl. Mag.* 1811.
Therozoa Brachiopoda, *Eichwald, Zool. Spec.* i. 272, 1831.
Mollusques Agames Endocephales Brachiopodes, *Latr. Fam. Nat.* 1825.
Palliobranchiata seu Brachiopodes, *Van der Hoev. Handb. der Zool.* 692, 1850.

In 1798 M. Cuvier (*Leçons d'Anatomie Comparée, Ann.* vii. i. tab. 5) placed the Brachiopods with *Hyalæa* in the third division of the shell-bearing acephalous mollusca, which he afterwards named *Brachiopodes*. Thus:

1. *Terebratules*. Terebratula, Calceola, Hyalæa.
2. *Lingules*. Lingula.
3. *Orbicules*. Orbicula.

In 1812 Lamarck (*Extrait du Cours*, 8vo, p. 105) regarded the Brachiopods as part of the *Acephales testacés*.

§ 1. Les *Brachiopodes*. Lingule, Terebratule, Orbicule.
§ 2. *Ostracées*. Radiolite, Calceole, Cranie, Anomie, and other bivalve shells.

In 1815 Rafinesque (*Analyse de la Nature*, 12mo, p. 148) divided the present Brachiopodes between the family *Ostreacia* of the *Bivalvia*, subfamily *Placunea*. 1. Calceolina = Calceola, 2. Cranicella=Crania.

Family *Brachiopea* of *Poleteria*. 1. Orbicula. 2. Terebratula. 3. Lingula.

In 1817, M. Cuvier (*Règ. Anim.* ii. and ed. 2, 1829, iii. 122) considered Les Brachiopodes as a class containing

1. Les Lingules.
2. Les Terebratules (Spirifères, Thécidées).
3. Les Orbicules (Cranies, Discines).

In 1818 Lamarck (*Hist. Nat. des Animaux sans Vertèbres*) regarded the Brachiopods as forming the greater part of his third section of the CONCHIFÈRES MONOMYAIRES.

1. *Les Rudistes*. 1. Spherulite. 2. Radiolite. 3. Calceola. 4. Birostrite. 5. Discine. 6. Cranie.
2. *Les Brachiopodes*. 1. Orbicule. 2. Terebratule. 3. Lingule.

In 1819 M. de Férussac (*Tabl. Syst. Moll.* fol. 38) regarded *Les Brachiopodes* as a class of the Acephales, and divided them into

Fam. 1. *Les Lingules*. Lingule.
2. *Les Terebratules*. Terebratule, Magas.
3. *Les Cranies*. Orbicule, Cranie, Thécidée.

and placed *Calceole* in the family *Rudiste* of the class Lamellibranches.

In 1825 M. de Blainville (*Manuel Malac.* 8vo) divided the class Acephalophores into four Orders; the following contain what are now considered Brachiopods.

Order I. PALLIOBRANCHES.

1. *Coquille symmétrique.* Lingule, Terebratule, Thécidie, Strophomène, Plagistome, Dianchore, Podopside.

2. *Coquille non-symmétrique, irrégulière, constamment adhérente.* Orbicule, Cranie.

Order II. RUDISTES. Sphærulite, Hippurite, Radiolite, Birostrite, Calceole.

In 1825 M. Latreille (*Fam. Nat. Règ. Anim.* 8vo, 196) divided the Mollusques Agames Endocephales Brachiopodes into two Orders and three Families, thus:

1. *Pedonculés.* 1. *Equivalves,* Lingule. 2. *Inéquivalves,* Terebratule.

2. *Sessiles.* 1. *Fixivalves,* Orbicule, Cranie, Acarde, Sphærulite. Placing the genus Calceole in the family Ostracés of Conchifères.

In 1829 M. Rang (*Manuel des Mollusques,* 12mo, Paris, p. 257) arranged the Acephales Testacés Brachiopodes thus:

I. *Lingules.* Lingule.

II. *Terebratules.* Térébratule, Strophomène, Thécidée, Calceole.

III. *Cranies.* Cranie, Orbicule.

In 1834 Leopold von Buch (*Ueber die Terebratèln,* Berlin, 4to) gives the following arrangement:—

A. Attached by the border.

* Between the two valves no hinge-line. 1. *Lingula.*

** At the border of the dorsal valve above the hinge.

† One valve perforated.

o. This perforation separated from the hinge-line by a deltidium. 2. *Terebratula* (Atrypa, Orthis, Strigocephalus, Uncites, Pentamerus, Magas).

oo. The perforation is triangular, open, of which the base rests on the hinge-line, and the apex reaches to the apex of one valve. 3. *Delthyris* (Spirifer, Cyrtia, Gypidia).

†† Neither valve perforated.

o. A large cardinal area. 4. *Calceola.*

oo. No cardinal area. 5. *Leptæna* (Producta, Strophomena).

B. Attached by the lower side.

a. Middle of the lower valve perforated for attachment. 6. *Orbicula.*

b. Lower valve entire, attached by its whole face. 7. *Crania.*

In 1836 M. Deshayes (*Lamk. Hist. Nat. Anim. sans Vert.* vii. 309) proposed the following arrangement :—

BRACHIOPODES.

I. *Valves articulées.*—1. *Productes*, Productus. 2. *Térebratules*, Terebratule. 3. *Thécidées*, Thecidée.

II. *Valves libres.*—4. *Lingules*, Lingule. 5. *Orbiculées*, Orbicule. 6. *Cranies*, Calceola, Cranie.

Dr. Gray in 1840 (*Synopsis Brit. Mus.* 1840, i. f. 7) divided the order thus :—

The family of *Terebratulidæ* are regular, and somewhat like a Grecian lamp in form, and have therefore been called Lamp-shells. The valves are articulated together, and are attached by means of a tendinous band, which passes out of the hole in the apex of the upper valve as in Terebratula and Spirifer.

The *Lingulidæ* are attached by a tendinous tube, resembling the stem of the Barnacles, which projects between the apices of the gaping valves.

The *Discinidæ*, on the other hand, have the tendon passing out of a linear slit near the middle of the under valve.

And at p. 155 gives a list of the genera as follows :—

1. *Lingulidæ*, Lingula. 2. *Terebratulidæ*, Terebratula, Spirifer. 3. *Productidæ*, Productus, Calceola. 4. *Thecideidæ*, Thecidea. 5. *Craniadæ*, Crania. 6. *Discinidæ*, Discina.

In 1841 Mr. John Phillips (*Figures and Descriptions of the Palæozoic Fossils*, 8vo, p. 54) arranged the genera of *Brachiopoda* thus :—

1. Valve free, attachment by exserted muscle.

A. Valves equal. 1. Lingula.

B. Valves unequal.

a. Larger valves imperforate, *Athyridæ*; * no cardinal area, Producta; ** a cardinal area, Calceola.

b. Larger valve perforated in or under the beak.

Perforation reaching to the hinge-line, *Delthyridæ*.

Cardinal area more or less common to both valves, Orthis. Cardinal area confined to the large valve. * Internal plate of the larger valves separate, Spirifera. ** Internal plates of the larger valve united on the inside line of the shell. † Plate narrow, Strigocephalus. †† Plates very narrow, Pentamerus.

Cardinal area obsolete, beak incurved over a minute perforation, which is often obtect, or merely serves to receive the beak of the smaller valve, Cleiothyris.

Perforation not reaching to the hinge-line, *Cyclothyridæ*. * Beak truncate, perforate, Epithyris. ** Beak acute, the perforation below it, Hypothyris.

In 1842 Dr. Gray (*Synopsis Brit. Mus.* 1842, 88) proposed the following division for the class *Brachiopoda*:—

"Some are attached by means of a tendinous cord, which passes out between or in a groove in one of the valves. The family of *Lingulidæ* are attached by a tendinous tube, resembling the stem of the Barnacles, which projects between the apices of the gaping valves, as in Lingula.

"The family of *Terebratulidæ* are regular and somewhat like a Grecian lamp in form, and have therefore been called Lamp-shells. The valves are articulated together, and the animals are attached by means of a tendinous band, which passes out of the hole in the apex of the upper valve, as in the Terebratulæ and Spirifer.

"The family *Discinidæ*, on the other hand, have the tendon passing out of a linear slit near the middle of the under valve; the shell is suborbicular, and the upper valve conical, like a Patella, but more symmetrical—Discina.

"Others are immediately attached by the outer surface of their under shell.

"The family of *Craniadæ* are attached by their flat lower valve, which has an oblique facet on the upper side; the upper valve is suborbicular, conical, with a subcentral apex like the *Discinæ*: the muscular scars of the lower valves bear some resemblance to a face, hence the name of *Crania*.

"The family of *Thecideidæ* are fossil shells, very like the last, but only attached by the apex of the lower valves, which is produced and somewhat lamp-like, and the cavity is furnished with a complicated apparatus to support the internal organs, as in *Terebratulidæ*—Thecidea.

"The family of *Productidæ* are fossils, probably allied to the latter; one valve is concave, the other flat, or concave and pressed into the cavity of the other; the hinge-line is straight and the shell subsymmetrical—Productus, Calceola."

In 1846 Mr. W. King (*Ann. & Mag. N. H.* xviii. 1846, p. 28) divided the genera of *Palliobranchiata* into the following families:—

1. *Obolidæ*. 1. Obolus.
2. *Lingulidæ*. 1. Lingula.
3. *Orbiculidæ*. 1. Orbicula.
4. *Craniidæ*. 1. Crania. 2. Siphonotreta.
5. *Calceolidæ*. 1. Calceola.
6. *Strophomenidæ*. 1. Strophomena. 2. Orthis. 3. Leptæna. 4. Chonetes.
7. *Productidæ*. 1. Productus. 2. Strophalosia.

8. *Terebratulidæ*. 1. Terebratula. 2. Hypothyris, 3. Pentamerus. 4. Camerophoria. 5. Uncites.
9. *Spiriferidæ*. 1. Spirifer. 2. Atrypa. 3. Martinia. 4. Strigocephalus.
10. *Thecideidæ*. 1. Thecidia.

In 1847 M. d'Orbigny (*Ann. Sci. Nat.* 1847; *Paléont. Franç. Terr. Crét.* iv. and *Cours Elémentaire de Paléontologie*, 12mo. p. 80, 1849) proposed the following arrangement:—

Order I. BRACHIOPODES BRACHIDES (*Brachidæ*).

1. BRACHIDES PROPRE.
Fam. 1. *Lingulidæ*. 1. Lingula. 2. Obolus.
2. *Calceolidæ*. 1. Calceola.
3. *Productidæ*. 1. Productus. 2. Chonetes. 3. Leptæna.
4. *Orthisidæ*. 1. Strophomena. 2. Orthisina. 3. Orthis.
5. *Rhynchonellidæ*. 1. Hemithyris. 2. Rhynchonella. 3. Strigocephalus. 4. Porambonites.
6. *Uncitidæ*. 1. Uncites. 2. Atrypa. 3. Pentamerus.

2. SEMIBRACHIDES.
1. *Spiriferidæ*. 1. Cyrtia. 2. Spirifer. 3. Spiriferina. 4. Spirigerina. 5. Spirigera.
2. *Magasidæ*. 1. Magas. 2. Terebratulina.
3. *Terebratulidæ*. 1. Terebratella. 2. Terebrirostra. 3. Fissirostra.
4. *Orbiculidæ*. 1. Siphonotreta. 2. Orbicella. 3. Orbiculoidea. 4. Orbicula.
5. *Cranidæ*. 1. Crania.

Order II. BRACHIOPODES CIRRIDES (*Cirrhidæ*).

1. *Thecidæ*. 1. Megathiris. 2. Thecidea.
2. *Caprinidæ*. 1. Hippurites. 2. Caprina. 3. Caprinula. 4. Caprinella.
3. *Radiolidæ*. 1. Radiolites. 2. Biradiolites. 3. Caprotina.

In 1848 Dr. Gray (*Ann. & Mag. N. H.* 1848, ii. p. 435; *Translated Wiegm. Arch.* 1849, 98, and *Lovén, Arsb.* 1845–1849, 213) proposed the following arrangement:—

BRACHIOPODA.—Subclass 1. ANCYLOPODA.

The oral arms not extensile, or only at the tip; on fixed shelly supports, or in grooves in the under or ventral valves; the mantle is adherent to the shell, the substance of the shell being pierced with numerous minute perforations, which are pervaded by the processes of the mantle.

Order I. ANCYLOBRACHIA.

The oral arms are attached to two shelly plates arising from the hinder or cardinal edge of the ventral valves; they are recurved and convolute on the inner side of the lamina. The animals are generally attached to marine bodies by a tendinous peduncle, which passes through a hole in the top of the umbo of the larger or dorsal valve; this peduncle and the hole are sometimes obliterated in the older specimens.

The order only contains a single family,

Fam. 1. *Terebratulidæ*,

which is nearly synonymous with the smooth *Terebratula* of Sowerby, the perforated *Terebratula* of Carpenter, the genus *Epithyris* of Phillips and *Terebratula* of King, the family *Terebratulidæ* of M'Coy, and *Cyclothyridæ* of Phillips.

The animal has been described by Linnæus, Pallas, Owen, Blainville, Philippi, D'Orbigny and others. In some genera the hoops are united together below by a transverse band which is attached to medial longitudinal ridges of the ventral valve, as in *Terebratula* of Retzius = the *Terebratella* of D'Orbigny, as *T. dorsata* and *Magas*, Sow. In others the hoop forms a ring, and is free from the ventral valve, as *Gryphus*, Megerle = *Terebratula*, D'Orb. and *Terebratulina*, D'Orbigny, for *T. vitrea* and *T. caput serpentis*. D'Orbigny indicates other genera under the names of *Terebrirostra* and *Fissirostra*.

Order II. The CRYPTOBRACHIA

have the oral arms entirely attached in the form of two or more lobed processes sunk into the grooves in the disc of the ventral valve. They are generally thick shells. This order also consists of only a single family.

Fam. 1. *Thecideadæ*.

The animals are described by Philippi and D'Orbigny. The genus *Argiope*, De Longchamps = *Megathiris*, D'Orb. (*Tereb. detruncata*) is attached by a tendon passing out of a very large perforation below the beak of the dorsal valves: Philippi confounds this genus with his *Orthis*, which is different from the *Orthis* of Dalman. *Thecidæa* has the shell attached by the truncated apex of the dorsal valve, or it is free when the apex is produced and entire. De Longchamps, who established the genus *Argiope* in 1839, pointed out the affinity of this genus to *Thecidæa*.

Subclass 2. HELICTOPODA.

The oral arms are elongate, regularly spirally twisted when in repose. The mantle-lobes are merely applied to the inner surface

of the shell, and the substance of the valves is not pierced with minute perforations, though the surface is sometimes spinulose, the spines being only formed on the edge of the shell while it is being increased in size.

Order III. SCLEROBRACHIA.

The oral arms support a shelly band arising from the hinder or cardinal edge of the ventral valve.

Fam. 1. *Spiriferidæ*.

The oral arms very largely developed and supported the whole of their length by a thin shelly? or cartilaginous? spirally twisted plate.

These shells are only known in the fossil state, but the spiral supports of the arms are generally preserved, and may be discovered by sections of the fossil, and are often to be seen in the fractured specimens.

This family is equivalent to the genus *Spirifer* of J. Sowerby the father, the family *Delthyridæ*, M'Coy, who gave some excellent illustrations of the structure and the *Spiriferidæ* of King. D'Orbigny proposed some genera under the names of *Spiriferina*, *Spirigera* and *Spirigerina*, according to the direction of the axis of the spiral cones, but it is doubtful if these genera are only new names to those already established.

The *Spirifer* of Sowerby, as reduced by M'Coy, and the *Martinia* of M'Coy, have the hinge as long or longer than the width of the shell. In *Atrypa*, Dalman, and *Athyris*, M'Coy, it is shorter and the shells oblong, rounder behind.

According to the description of Mr. King, the genus *Strigocephalus* would appear to form the passage between this and the next family (*Ann. Nat. Hist.* xviii. 89).

Fam. 2. *Rhynchonellidæ*.

The oral arms are elongate, fleshy, supported at the base by two short, hard, diverging shelly laminæ arising from the hinge-margin of the ventral valve.

They are easily known from the *Terebratulidæ* by the cavity of the shell being without shelly plates, its substance not perforated, and its surface being generally radiately plaited.

Only one species, *T. psittacea*, is known in the recent state; its animal has been described by Professor Owen. The family is equivalent to the plaited *Terebratula* of the elder James Sowerby and Von Buch, the non-perforated *Terebratula* of Carpenter, the genus *Hypothyris* of Phillips, and part of the family *Terebratulidæ* of King. It contains the genus *Rhynchonella* of Fischer and D'Orbigny = *Hypothyris* of Phillips; *Camerophoria*, King;

Uncites, Defrance?; *Trigonosemus*, Kœnig; *Rhynchora*, Dalman; *Pygope*, Link; *Delthyridæa*, M'Coy; *Pentamerus*, Sowerby.

Order IV. SARCICOBRACHIA.

The oral arms fleshy to the base and without any shelly support; the lower valve without any processes on the hinge-margin or disc, or except sometimes a slight medial longitudinal elevation.

Fam. 1. *Productidæ*

consists entirely of fossil species, some much resembling those of the former family, but the shells are generally spinose; they are only attached to marine bodies by the surface of the ventral valve, as the genera *Productus*, Sow.; *Strophalosia*, King; *Chonetes*, Fischer; *Leptæna* and *Orthis*, Dalman; *Strophomena*, Rafinesque; and *Calceola*, Lamk. This family comprises Mr. King's *Productidæ*, *Strophomenidæ* and *Calceolidæ*.

Fam. 2. *Craniadæ*.

Nearly allied to the last, but the upper valve is simply conic like *Patella*, and the animal is attached by the outer surface of the ventral valve.

The animal has been figured by Müller, Poli and others. It includes the recent genus *Crania* of Retzius, including the *Orbicula* of Lamarck, *Criopus* of Poli. The lower valve of the only recent species I am acquainted with varies greatly in thickness and form according to the position and habitation of the animal. This animal in many particulars is allied to *Thecidæadæ*.

Fam. 3. *Discinidæ*.

The upper valve is conical and patelloid, the lower orbicular, and is attached to marine bodies by a short tendinous peduncle, which passes out through a slit in the hinder part of the disc of the ventral valve.

The animal of this genus has been described by Mr. Owen under the name of *Orbicula*, Mr. G. B. Sowerby having some years ago confounded this shell with that genus, which has caused confusion, which has existed to this day. The shell was first described by Schumacher as a section of the genus *Crania*. Mr. King, probably misled by this mistake, does not include it in his arrangement. This shell is peculiar, for being horny rather than a shell texture, it is flexible when moist.

Fam. 4. *Lingulidæ*.

The valves are nearly equal elongate, and supported by a thick peduncle which comes out between the beaks of the two valves. The shells are covered with a horny periostraca, and in some species the shelly matter is so very thin that the shells are flexible

and nearly entirely cartilaginous. The family consists only of a single genus, *Lingula*.

Order V. Rudistes.

This Order has been placed by modern authors with the Brachiopoda: the proofs of its belonging to this family are not very evident; but as there is no other to which they appear to be more nearly allied, they may as well be retained in this position.

Lamarck, Cuvier, Férussac, and some other authors have regarded some of the genera as belonging to Cephalopoda, and others as Bivalves (Conchifera). Deshayes regards them as more nearly allied to *Chama*, the character of the family having been lost by the destruction of the inner coat of the shell during the fossilization of the specimen.

M. d'Orbigny has properly united them into one group under the name of Irregular Brachiopods or Rudistes, but he includes with them the genus *Crania*, which is a true Brachiopod.

They form three very distinct families.

Fam. 1. *Radiolitidæ*.

The lower valves more or less elongate-conical, fixed; the upper valve conical or spiral, free; the texture of the lower valve cellular or fibrous.

The *Radiolites* has the upper valve flat or conical and cap-like. The *Caprina*, D'Orb., has a spiral and produced upper valve. The first of these genera has had many names applied to it, but that given by Lamarck has the priority. It has been called *Sphærulites*, *Ostracites* and *Acardo*, and the cast of the interior cavity has been considered as a genus, under the name of *Birostris* and *Iodamia*.

Fam. 2. *Hippuritidæ*.

The lower valve is elongate, tapering sub-cylindrical, of a solid laminated texture; the upper valve is nearly flat, and pierced with peculiar pores radiating to the circumference with branches diverging to the upper surface.

This family contains only a single genus, *Hippurites*, Lamarck, which has also had many other names applied to it, as *Cornucopia*, *Orthoceratites*, *Batolites* (or *Batholites*), *Raphanister*, and *Bitubulites*.

Fam. 3. *Caprotinidæ*.

The lower or fixed valve is conical and spirally twisted, and marked internally with prominent ridges or transverse septa; the dorsal or free valve is oblique or spiral. They differ from *Caprina* in the valves not being of a cellular or fibrous texture.

This family contains two genera:—

1. *Caprotina*, D'Orb., which has the cavity of the shell merely marked with internal ridges.

2. *Ichthyosarcolites* has the cavity of the large spiral or involute fixed valve divided transversely by a number of oblique septa; the upper valve is probably like an operculum, but this genus is very imperfectly known.

In 1849 Dr. H. G. Bronn (*Index Palæontologicus*, 8vo, p. 210) divided the BRACHIOPODA thus:—

A. genuina. 1. Obolus. 2. Lingula. 3. Siphonotreta. 4. Terebratula. 5. Magas. 6. Thecidea. 7. Atrypa. 8. Stringocephalus. 9. Uncites. 10. Pentamerus. 11. Camerophoria. 12. Enteletes. 13. Spirifer. 14. Trigonotreta. 15. Delthyris. 16. Porambonites. 17. Orthis. 18. Pronites. 19. Hemipronites. 20. Orthambonites. 21. Gonambonites. 22. Chonetes. 23. Leptæna. 24. Plectambonites. 25. Strophonema. 26. Productus. 27. Calceola.

B. *Rudistæ.* 28. Orbicula. 29. Crania. 30. Polyconites. 31. Hippurites. 32. Radiolites. 33. Sphærulites. 34. Diceras. 35. Ichthyosarcolithus. 36. Caprina. 37. Requienia. 38. Caprotina. 39. Plagioptychus. 40. Dipilidia. 41. Monopleura.

In 1850 Dr. Van der Hoeven (*Handbuch der Zoologie*, Leipsic, 1850, 80. p. 692) divided the *Palliobranchiata seu Brachiopoda* thus:—

I. *Testa acardis.* 1. Lingula. 2. Orbicula. 3. Crania.

II. *Testa cardine instructa.* 4. Calceola. 5. Thecidea. 6. Terebratula. 7. Spirifer. 8. Productus.

Subclass 1. ANCYLOPODA.

The oral arms recurved and affixed to shelly appendages on the disk of the dorsal valve. Shell minutely and closely punctate.

Ancylopoda, *Gray, Ann. & Mag. N. H.* ii. 1848, 436; *Cat. Brit. Moll. B. M.*; *in Wiegm. Arch.* 1849, 48. and p. 7.

Order I. ANCYLOBRACHIA.

Oral arms affixed to calcareous lamellæ, forming a loop attached to the hinge-margin of the dorsal valve, and more or less prominent in its cavity.

Ancylobrachia, *Gray, Ann. N. H.* 2nd ser. ii. 435, 436, 1848; *Cat. Bivalves B. M.*; *Wiegm. Arch.* 1849, 98 (see p. 8).

Brachiopodes brachides (Brachidæ) part., *D'Orb., Cours Elém. Paléont.* 80, 1849 (see p. 7).

Fam. 1. TEREBRATULIDÆ.

Shell minutely punctate, usually round or oval, and smooth or striated; *ventral valve* (fig. 2) largest, its umbo produced into a beak with the apex truncated and perforated; foramen (*f*) separated from the hinge-line by a small triangular plate or *deltidium* (*d*) composed of two pieces (*deltidia*); teeth (*t*) situated one on each side of the deltidium, supported by plates; *dorsal valve* (fig. 1) with a depressed umbo; furnished interiorly with a prominent cardinal process (*j*) between the sockets for the teeth (*t'*), a hinge-plate (*p*) with four cavities and a central ridge or *septum* (*s*); internal skeleton in the form of a slender shelly *loop*, attached by its crura (*c*) to the hinge-plate, and furnished near its origin with *oral* processes (*o*).

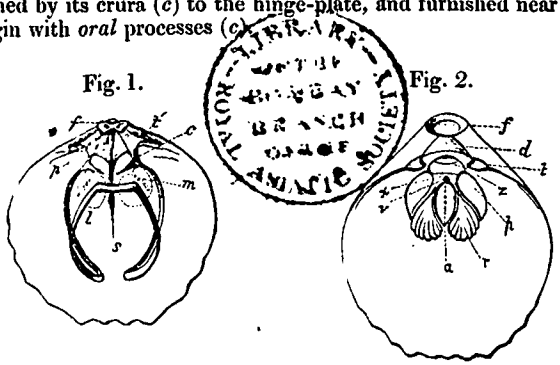

Fig. 1.

Fig. 2.

Fig. 1. Dorsal valve:—*j*. cardinal process; *t'*. dental sockets; *p*. hinge-plate; *s*. septum; *c*. crura of the loop; *l*. reflected portion of the loop; *m*. quadruple adductor-impression.

Fig. 2. Ventral valve:—*f*. foramen; *d*. deltidium; *t*. teeth; *a*. adductor-impression; *r*. retractor impressions; *p*. pedicle-muscles; *x*. anal muscles; *v*. position of the vent; *z*. attachments of peduncle-sheath.

Animal always attached by a peduncle; furnished with cirrated arms, united throughout by membrane, folded upon themselves, and only spiral at their extremities; muscles of three kinds,—adductors, retractors, and those which go to the peduncle (*byssal* or *pedal* muscles of ordinary bivalves). The adductors are attached to four spots near the centre of the dorsal valve (*m*), and to a single spot behind the centre of the opposite valve (*a*); the retractors originate on each side of the adductor in the ventral valve (*r*), and are attached to the cardinal process (*j*) of the dorsal valve; the hinge-teeth form the *fulcrum* on which the dorsal valve turns; of the *pedicle* muscles, two (*p*) originate outside the adductor and behind the retractors in the ventral valve: two

others, each with a double termination, are inserted in the hinge-plate (*p*) of the dorsal valve; the *septum* supports the visceral membranes.

The position at which the intestine of Terebratula terminates, namely just behind the adductor muscle (fig. 2, *v*), seems to imply that it discharges through the byssal *foramen*; and as the same arrangement exists in *Terebratulina, Kraussia, Argiope,* and in the recent *Rhynchonella nigricans,* it becomes probable that such is the general rule; in those extinct genera which have the foramen closed at an early age, there is always an opening between the *deltidium* and the umbo of the smaller valve (*e. g.* in *Uncites gryphus*), which has been mistaken for a byssal notch. The foramen in the hinge-plate of *Athyris* shows that the intestine took the same course in the *Spiriferidæ* as it is known to do in the *Rhynchonellidæ* and *Terebratulidæ* *.

The following illustration (fig. 2*) is from a drawing by Mr. Albany Hancock.

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Fig. 2*. *Waldheimia flavescens.*

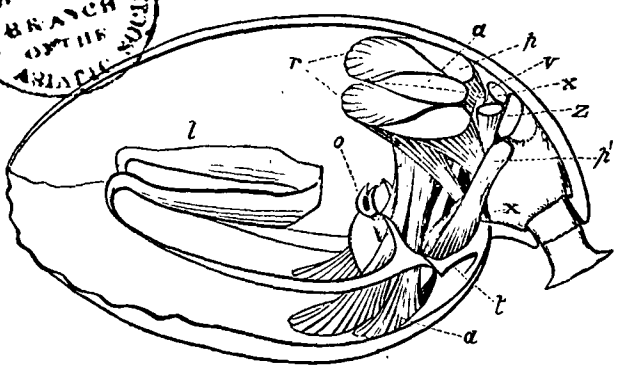

Fig. 2*. *a.* adductors; *r.* retractors; *x.* accessory retractors (anal muscles); *p. p.* pedicle-muscles; *z.* function uncertain; *o.* mouth; *v.* vent; *l.* loop; *t.* dental socket.

* The muscular system of *Ter. flavescens* was correctly (though diagramatically) represented and described by Mr. King in his Memoir of the Permian Fossils, published by the Palæontographical Society in 1850; the *function* of the retractor muscles was not stated, but must have been understood. (*Woodward, MS.*)

Terebratuladæ, *Leach, MSS.* 1818, *Ann. & Mag. N. H.* xx. 273.
Terebratulidæ, *Gray, Syn. B. M.* 1840; 1842, 85, 92; *Sow. Ann. N. H.* 2nd ser. ii. 436, 1848; *Wiegm. Arch.* 1849, 98.
M'Coy, Carb. Foss. Ireland.
King, Ann. & Mag. Nat. Hist. xviii. 26.
Forbes & Hanley, Brit. Moll. ii. 343.
D'Orb. Cours Paléont. 80. 1849.
Terebratulacea, *Menke, Syn.* ed. 2. 95, 1830.
Terebratulacea, part., *Anton, Verz. Conch.* 12. 21.
Terebratulaceæ, *Menke, Syn.* ed. 1. 56, 1828.
Les Térébratules, *Féruss. Tab. Syst.* 1821.
Rang, Man. Moll. 258.
Terebratulinæ, *Agass. Nomen.* 1847.
Lingulæ, part., *Eichw. Zool. Spec.* i. 275.
Thecididæ, part. (Megathyris), *D'Orb. Ter. Crét.* iv.
Cyclothyridæ, *Phillips, Pal. Foss. Cornwall.*

Synopsis of Tribes and Genera.

A. *Loop attached to the hinge-plate.*—**Terebratulanina.**

1. TEREBRATULA.
2. TEREBRATULINA.
3. WALDHEIMIA.

B. *Loop attached to the septum in the middle of the dorsal valve.*—**Magasina.**

4. TEREBRATELLA.
5. TRIGONOSEMUS.
6. MAGAS.
7. BOUCHARDIA.
8. MEGERLIA.
9. MORRISIA.
10. KRAUSSIA.

C. *Loop attached to the surface of valve.*—**Argiopina.**

11. ARGIOPE.

Tribe 1. TEREBRATULANINA.

Shell usually oval, valves convex, margins even or only slightly waved; hinge-line curved; beak of the larger valve perforated, the foramen quite at the apex; deltidium of two pieces, often blended; internal skeleton consisting of a slender shelly loop, not attached in the middle to the valve.

Animal with the oral arms united by membrane, forming a 3-lobed disc, the central lobe elongated and folded spirally (figs. 3, 5, 6 and 7).

Concha anomia, *Fab. Colonna, Tract. de Purp.* 1616.
Terebratula, *Llhwyd, Lith. Brit.* 40, 1699.
Brug, 1789, *Enc. Méth.* t. 6. p. xiv.
Müller, Zool. Dan. 1776.
Retzius, Dissert. 1788.
Lamk. Phil. Zool. 1809; *Hist.* vi. 243, ed. 2. vii. 319.
Lovèn, Ind. Moll. Skand. 29.
Leach, Zool. Miscell. i. 76, 1814.
Schum. Ess. 133.
Péruss. Tab. Syst. 1821.
Rang, Man. 1829.
Gray, Lond. Med. Repos. xv. 1821; *Syn. B. M.* 1840; 1842, 92; *Proc. Zool. Soc.* 1847, 202.
Menke, Syn. 1828 & 1830.
Forbes & Hanley, Brit. Moll. ii. 349.
Anomia, part. (animal), *Linn.* 1768, *Syst. Nat.*
Lampades, part., *Gevers*, 1787.
Lampas, *Humph.* 1797, *Mus. Calon.* (not *Schum.*).
Gryphus, *Mühlfeldt*, 1811, *Berlin Mag.* 64.
Gray, Ann. & Mag. N. H. 1848, ii. p. 438 (see above, p. 8).
Epithyris, *Phillips*, 1844, *Pal. Foss.* p. 55.
Smooth Terebratulæ (with a truncated beak), *Morton*, 1712, *History of Northampton.*
Terebratula (restricted), *Fischer*, 1809, *Foss. Nouv. Moscou.*
Smooth Terebratulæ, *Sowerby*, 1815, *Min. Con.* p. 189.
Terebratulæ non-plicatæ, *Buch*, 1834, *über Terebrateln.*
Punctate Terebratulæ, *Morris*, 1841, *Min. Con. Suppl.* No. 108, p. 12.
Carpenter, 1844, *Report Brit. Assoc.* p. 18.
Epithyridæ, *Morris*, 1846, *Geol. Soc. Journ.* p. 382.
Terebratula and Terebratulina, *D'Orb. Paléont. Franç.*
Criopus and Criopoderma, *Poli, Test. Sicil.*
Trigonosemus, *Kœnig, Icon. Sect.* iv. 1825.
Terebratularius, *Dumer. Zool. Anal.* 168, 1806.
Apleurotis, Megorima, Trigonina, Diclisma, Obovites, Terebratula, *Rafin. Anal.*
Terebratula A*, *Blainv. Dict. Sci. Nat.* liii. 145, 1828.

1. TEREBRATULA.

Shell:—Valves convex, foramen complete; loop short and simple (fig. 3).

Terebratulæ with short loops, *Davidson*, 1852, *Ann. Nat. Hist.* p. 364; *Mon. Cret.* p. 45.

Epithyris (elongata), *King*, 1849, *Permian Fossils*, 81, 146 (not *Phillips*).

Terebratulæ Jugatæ repandæ, part., *Buch*, 1834, *über Terebrateln.*

Terebratulæ carinatæ sinuatæ, part., *Buch*, *l. c.* 1834.

Terebratulæ biplicatæ, *Quenst.* 1851, *Handb.* p. 471.

Gryphus (vitrea), *Megerle*, *Berl. Mag.* 1811, 64.

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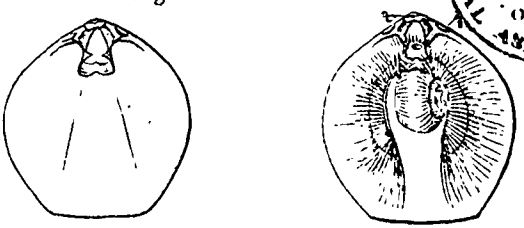
Fig. 3. *Terebratula vitrea.*



A. B.

A. Dorsal valve, showing the small loop.
B. Dorsal valve with the animal; the œsophagus passes through the opening of the loop.

1. TEREBRATULA VITREA. B.M.

Shell rounded-ovate, slightly truncated in front, ventricose, smooth, translucent, milky, or pale horn-colour; valves nearly equal; margins even; beak short, recurved; foramen small, complete; deltidium nearly concealed; loop simple, one-fourth the length of the shell. Lon. 17, lat. 14, alt. 11 lines.

Anomia terebratula, *Linn. S. N.* 1153.
Gmelin, S. N. 3344.
Da Costa, Elém. 292. t. 6. f. 3.
Anomia vitrea, *Born. Mus.* 119. *Vig.* 116.
Gmelin, S. N. 3347.
Terebratula vitrea, *Lamk. Syst. A. s. V.* 139, 1801; *E. M.* t. 239. f. 1; *Hist.* vi. 245, ed. 2. vii. 329.
Sow. Thes. Conch. vii. 353. t. 70. f. 56–59.
Philippi, Moll. Sicil. i. 95. t. 6. f. 6; ii. 66.

Kuster, Conch. vii. 21. t. 2. f. 11–13; t. 1. f. 13. 14.
Davidson, Ann. Nat. Hist. 1852, p. 364.

Terebratula (*a*) sub-vitrea (*Leach*), *Blainv. Dict. Sci. Nat.* liii. 135. 1828.

Terebratula euthyra, *Phil.* 1844, *Moll. Sicil.* ii. p. 68. t. 18. f. 8?

Gryphus vitreus, *Megerle, Berl. Mag.* 1811, 64.

Habitat. Mediterranean, in 90 to 250 fathoms, on nullipore mud (*Forbes*).

Fossil. *Pliocene.* Sicily.

2. TEREBRATULA SPHENOIDEA.

Shell triangularly-ovate, truncated in front, smooth; margins even, obscurely bisinuated in front; dorsal valve convex near the umbo, depressed in front; beak prominent, scarcely curved, foramen moderate, round; deltidium conspicuous; loop short, simple. Lon. 12, lat. 10, alt. 6 lines.

Terebratula sphenoidea, *Phil.* 1844, *Moll. Sicil.* ii. p. 67. t. 18. f. 6.
Bronn, Index, p. 1251.

Fossil. *Pliocene.* Sicily.

3. TEREBRATULA SEPTATA.

Shell oval, subquadrate, ventricose, smooth; valves gibbous, rather truncated in front, sides nearly parallel; dorsal valve with the front margin rather bent downwards, beak prominent, thick; foramen moderate, round; deltidium solid. Lon. 10, lat. 9, alt. 7 lines.

Terebratula septata, *Phil.* 1844, *Moll. Sicil.* ii. p. 68. t. 18. f. 7.
Bronn, Index, p. 1250.

Fossil. *Pliocene.* Sicily.

4? TEREBRATULA UVA.

Shell narrowly-oblong, gibbous, smooth, slightly translucent, pale horn-colour; margins even; beak produced, truncated; foramen large, deltidium small, concave; loop short?. Lon. 13, lat. 7, alt. 6 lines.

Terebratula uva, *Brod.* 1833, *Proc. Zool. Soc.* 124.
G. B. Sow. Thes. Conch. vii. 353. t. 70. f. 53–55.
Dav. Ann. Nat. Hist. 1852, ix. p. 364.

Hab. Gulf of Tehuantepec (Mus. Cuming).

5. TEREBRATULA GRANDIS. B.M.

Shell oval, ventricose, smooth, becoming very thick with age; front margin obscurely biplicate; beak produced, slightly recurved, lateral ridges indistinct; foramen large and round; del-

tidium narrow, concave, incomplete in the fry; loop simple, one-third as long as the dorsal valve. Lon. 4$\frac{3}{12}$, lat. 3, alt. 2 inches (extreme size).

Terebratula grandis, *Blum.* 1803, *Arch. Tell.* t. 1. f. 4; *Encycl. Méth.* p. 259. f. 2.
Bronn, Index, p. 1237.
Phil. Moll. Sicil. ii. p. 67.
Dunker, Palæont. p. 129. t. 18. f. 4.
Terebratulites giganteus, *Schl.* 1813, *Leonhard's Min. Tasch.* 7. p. 104; *Petref.* p. 278. no. 48.
Buch, Mém. Soc. Géol. France, iii. p. 222 (not figured).
Terebratula spondylodes, *Smith,* 1817, *Strat. Syst.* p. 12.
Terebratula birostris, *Val.* 1819, *in Lam. Hist. Nat.*; *Dav. Ann. Nat. Hist.* June 1850, pl. 13. f. 23.
Terebratula variabilis, *Sow.* 1829, *Min. Con.* vi. p. 148. t. 576. f. 2–5.
Galeotti, Mem. Geol. Brabant, p. 151.
Nyst, Coq. Foss. Anvers, p. 15. no. 37.
Terebratula perforans, *Dujardin,* 1837, *Mém. Soc. Géol. Fr.* p. 272.
Terebratula maxima, *Charlesworth,* 1837, *Mag. Nat. Hist.* p. 92. f. 13, 14.
Terebratula Sowerbii, *Nyst,* 1843, *Coq. Belg.* p. 335. pl. 27. f. 3.

Fossil. *Miocene.* England; Belgium; France.

6. ?TEREBRATULA AMPULLA. B.M.

Shell roundish, inflated, smooth; margins obscurely plaited in front. Lon. 24, lat. 18 lines.

Anomia ampulla, *Brocch.* 1814, *Conch.* ii. 466. t. 10. f. 5.
Terebratula ampulla, *Desh. E. M.* iii. 1027.
Buch, Mon. Tereb. 111. n. 4.
Val. in Lamk. Hist. vii. 336.
Dav. Ann. Nat. Hist. June 1850.
Terebratula Pedemontana, *Valenciennes, in Lam. Hist.* no. 34. See *Dav. Ann. Nat. Hist.* June 1850, pl. 14. f. 34.
Terebratula complanata, *Brocchi, Conch.* ii. p. 469. t. 10. f. 6?.

Fossil. *Miocene.* Turin; Malta.

7. TEREBRATULA BISINUATA. B.M.

Shell oval, rather depressed, smooth, fragile; margins biplicate in front; beak produced, nearly straight; foramen large, circular; deltidia small, united. Lon. 22, lat. 19 lines.

Terebratula bisinuata, *Valenc.* 1819, *in Lamk. Hist.* vii. 339.
Desh. Foss. Paris, i. t. 65. f. 1, 2; *E. M.* iii. 1025.
Davidson, Ann. Nat. Hist. v. pl. 13. f. 32; *Mon. Ter. Brach.* p. 19. pl. 1. f. 17.

Terebratula gigantea, var., *Buch, Mém. Soc. Géol. France*, iii. p. 222. pl. 20. f. 3 (not *Schl.*).
Terebratula succinea, *Desh.* 1824, i. p. 390. pl. 65. f. 3 (young).
Terebratula grandis, *Bronn, Index*, p. 1237 (not *Blum.*).
Fossil. *Eocene.* France; England.

8. TEREBRATULA MONTOLEARENSIS.

Shell oval, depressed and bi-sinuated in front, smooth; beak moderately prominent, slightly recurved; foramen moderate, circular; deltidium triangular. Lon. 11–13, lat. 8–11, alt. 5–lines.

Terebratula Montolearensis, *Leymer.* 1846, *Mém. Soc. Géol. France*, t. 1. p. 362. pl. 15. f. 13, 14.
Fossil. *Eocene.* France.

9. TEREBRATULA ÆQUILATERALIS.

Shell smooth, equilaterally triangular, rounded in front; ventral valve gibbous; beak large, curved, truncated by a round foramen; margins even. Lon. 28, lat. 28 lines.

Terebratula æquilateralis, *D'Arch.* 1846, *Mém. Soc. Géol. France*, 2nd ser. ii. p. 214. pl. 9. f. 7.
Fossil. *Eocene.* France.

10. TEREBRATULA TRILOBATA. B.M.

"*Shell* oval, smooth, subantiquated, somewhat sinuated in front; beak produced, recurved; foramen apical, minute." Lon. , lat. 10, alt. lines.

Burtin, 1784, *Oryct. Brux.* pl. 8. f. L. N. P.
Terebratula trilobata, *Galeotti*, 1837, *Mem. Geog. Brabant.* t. 12. p. 150. pl. 4. f. 16 (imperfect).
Terebratula lævis, *Nyst*, 1843, *Belg.* p. 334.
D'Orb. Prod. ii. p. 395.
Terebratula Kickxii (*Galeotti*), *Bronn, Index*, p. 1240.
Terebratula papilio, *König*, 1825, *Icones Foss. Sectiles*, f. 220 (imperfect; no description).
Fossil. *Eocene.* Belgium.

11.? TEREBRATULA KICKXII.

"*Shell* oval, attenuated in front, inflated, smooth, ornamented with fine, regular, concentric lines of growth; margins even; beak short, recurved, with a very minute apical foramen." Lon. and lat. 4½ lines.

Terebratula Kickxii, (*Galeotti*) *Nyst*, 1843, *Bely.* p. 335. pl. 29. f. 4.
D'Orb. Prod. ii. p. 395.

Fossil. *Eocene.* Belgium.

12. TEREBRATULA WILMINGTONENSIS.

Shell oblong, smooth; margins nearly even; beak produced, nearly straight, truncated by a moderately large foramen; deltidium rather long. Lon. 10, lat. 7 lines.

Terebratula Wilmingtonensis, *G. Sow.* 1845, *Proc. Geol. Soc.* 1845, p. 565.

Fossil. *Eocene.* N. Carolina.

13. TEREBRATULA CARNEA. B.M.

Shell depressed, smooth, obtusely five-sided, front edge short; valves equally convex, slightly flattened along the middle, often of a dull red colour; margins even; beak small; foramen minute. Lon. 14, lat. 14, alt. 8 lines.

Terebratula carnea, *Sow.* 1813, *Min. Con.* i. p. 47. pl. 15. f. 5, 6.
D'Orb. Ter. Crét. iv. t. 513. f. 5–8; *Prod.* ii. p. 258.
Quenstedt, Handb. p. 473. t. 38. f. 2.
Pusch, Polèn. Pal. p. 18. t. 3. f. 12?.
Alth, Geog. Lemberg (*in Haidinger's Abhandl.* 1850), p. 258. t. 13. f. 8.

Terebratula lens, *Nilsson, Petref. Suec.* p. 35. pl. 4. f. 6.
Dalman, Vet. Acad. p. 146.

β. Terebratula elongata, *Sow.* 1823, *M. C.* v. p. 49. t. 435. f. 1, 2.

Terebratula ovata, *Nilsson, Petr. Suec.* p. 33. t. 4. f. 3 (not *Sow.*).
Dalman, Vet. Acad. p. 145.
Rœmer, Kreid. p. 44.

Terebratula minor, *Nilsson, Petr.* 1827, p. 34. t. 4. f. 4.
Rœmer, Kreid. p. 44.

Terebratula plebeia, *Dalman*, 1828, *Vet. Acad.* p. 145. t. 4. f. 4.

Fossil. *Upper Chalk.* England; Belgium; France; Russia; Sweden.

14. TEREBRATULA RHOMBOIDALIS.

Shell rhomboidal, smooth, marked with a few concentric lines; margins sinuated in front; *dorsal* valve gibbose, depressed at the sides; *ventral valve* curved, flattened along the centre, and slightly depressed in front; beak short, curved; foramen moderate, round; deltidium distinct. Lon. 13, lat. 9½, alt. 7 lines.

Terebratula rhomboidalis, *Nilsson*, 1827, *Petr. Suec.* p. 34. t. 4. f. 5.
Dalman, 1828, *Vet. Acad.* p. 146.

? Terebratula collinaria, *D'Orb.* 1847, *Ter. Crét.* iv. p. 81. t. 507. f. 6–10.

Fossil. *U. Greensand.* Sweden.
? Neocomian. France.

15. TEREBRATULA BECKSII. B.M.

Shell obovate, smooth, laterally compressed towards the beak; margins even; dorsal valve strongly curved, gibbous near the umbo, depressed and flattened in front; ventral valve rather straight; beak short and thick, not recurved; foramen moderate, round; deltidium solid, concave. Lon. 10, lat. 8, alt. 6 lines.

Terebratula Becksii, *Rœmer*, 1840, *Nord. Kreid.* p. 44. t. 7. f. 14.
Bronn, Index, p. 1229.

Fossil. *Chalk* (*Pläner*). Ahaus, Westphalia.

16. TEREBRATULA SQUAMOSA. B.M.

Shell orbicular, or oval; valves nearly equally convex, marked with squamose lines of growth and fine radiating punctate striæ; margins even, or slightly bisinuated; beak short, recurved; foramen round; deltidium solid. Long. 7, lat. 6, alt. 5½ lines.

Terebratula squamosa, *Mantell*, 1822, *Geol. Suss.* p. 132.
Davidson, Ann. Nat. Hist. 1847, p. 254. pl. 18. f. 8.
D'Orb. Prod. ii. p. 172.
Bronn, Index, p. 1251.

Terebratula Robertoni, Viquesneli, Murchisoni et Leveillei?, *D'Arch.* 1847, *Mém. Géol. Soc. France*, 11. pt. 2.

Fossil. *U. Greensand, Chalk-marl.* England.

17. TEREBRATULA FITTONI.

Shell small, oval, ventricose, smooth, biplicate in front, ornamented with squamose lines of growth; valves equally convex; beak recurved; foramen large, round. Lon. 5, lat. 4, alt. 3½ lines.

Terebratula Fittoni, *Hag.* 1842, *Neues Jahrb.* p. 542. t. 9. f. 6.
Bronn, Index, p. 1236.

Fossil. *Chalk.* Rügen.

18. TEREBRATULA CAPILLATA. B.M.

Shell oval, or somewhat pentangular, front margin slightly waved; dorsal valve slightly convex; ventral valve deep; beak short, rounded and recurved, truncated by a large circular foramen; deltidium incomplete; surface ornamented with minute, radiating, wavy striæ, decussated by a few lines of growth. Lon. 13, lat. 11, alt. 8 lines.

Terebratula capillata, *D'Arch.* 1846, *Bull. Soc. Géol. Fr.* 2nd ser. iii. p. 336; *Mém. Soc. Géol. France*, 2nd ser. ii. p. 323. pl. 20. f. 1–3.
Davidson, Mon. Cret. p. 46. pl. 5. f. 12.
Terebratula linearis, *Münster, in Cambridge Museum.*
Spondylus undulatus, *Geinitz* ! (according to *Koninck*).
Fossil. *Red Chalk* (*Gault*). Norfolk.
Tourtia (*Greensand*). Tournay, Belgium.

19. TEREBRATULA LONGIROSTRIS. B.M.

Shell ovate-oblong, smooth, with long, straight and thick beak; foramen very large, round; deltidium elongated, solid; front margin slightly bisinuated. Lon. 28–39, lat. 14–22, alt. 11–18 lines.

Anomites longirostris, *Wahl.* 1821, *N. Acta Upsal.* viii. p. 61. t. 4. f. 15, 16.
Terebratula longirostris, *Nilsson, Petr. Suec.* p. 33. pl. 4. f. 1.
Dalman, 1828, *Vet. Acad.* p. 144.
D'Orb. Prod. ii. p. 258.
Trigonosemus rustica, *König*, 1825, *Icones Foss. Sect.* p. 4. f. 75.
Fossil. *Chalk.* Sweden.

20. TEREBRATULA DEPRESSA. B.M.

Shell smooth, oblong, transversely dilated, contracted towards the beak, obtuse in front; beak produced, straight, thick, truncated by a large foramen; deltidium large and solid. Lon. 24, lat. 19 lines.

Terebratula depressa, *Val. in Lam.* 1819, *An. sans Vert.* vi. p. 249.
D'Orb. Prod. ii. p. 172.
Davidson, 1850, *Ann. Nat. Hist.* June, pl. 13. f. 15.
Terebratula longirostris ?, *Rœmer*, 1839, *Nordd. Ool.* ii. p. 21. t. 18. f. 13.
Bronn, Index Paleont. 1241.
Rœmer, Kreid. p. 42.
Terebratula Nerviensis, *D'Archiac*, 1847, *Mém. Soc. Géol. Fr.* ii. p. 313. pl. 17. f. 2–10.
Terebratula Viquesneli, *D'Archiac*, pl. 18.
Terebratula ovalis, *Morris, Journ. Geol. Soc.* 1846, p. 384. f. 1 (not *Lamk.*).
Fossil. *U. Greensand*? (*Tourtia*). Belgium.

21. TEREBRATULA BIPLICATA. B.M.

Shell oblong, smooth, gibbose; margins bisinuated in front; valves convex, marked with lines of growth and obscurely striated

at the sides; beak thick, rounded, recurved; foramen rather large, round; deltidium solid, inconspicuous; loop simple, short. Lon. 13, lat. 10, alt. 8 lines.

Anomia biplicata, *Brocchi*, 1814, *Conch. Foss.* ii. p. 419. pl. 10. f. 8.
Terebratula biplicata, *Sow.* 1815, *Min. Con.* i. p. 201. t. 90.
Defrance, 1828, *Dict. Sc. Nat.* 53. p. 151?.
Terebratula Dutempliana, *D'Orb.* 1847, *Tef. Crét.* p. 93. pl. 511. f. 4–8.

Fossil. *U. Greensand, Chalk.* Tuscany; England; France.

22. TEREBRATULA OBTUSA. B.M.

Shell oval, smooth, rather depressed, bisinuated in front; lines of growth becoming strong towards the margin; dorsal valve much flattened, sinuated only on the front of adult specimens; ventral valve with a thick, recurved beak; foramen large and round; deltidium nearly concealed. Lon. 18, lat. 16, alt. 10 lines.

Terebratula obtusa, *Sow.* 1823 (and T. biplicata, part.), *Min. Con.* v. p. 53. t. 437. f. 2–4.
Terebratula curvirostris, *Nilsson*, 1827, *Petref. Suec.* p. 33. t. 4. f. 2.
Dalman, Vet. Acad. p. 144.
Rœmer, Kreid. p. 42.

Fossil. *U. Greensand* ("*Gault*"). Cambridge; Sweden.
Red Chalk (*Gault*). Hunstanton.

23. TEREBRATULA TORNACENSIS. B.M.

Shell smooth, inflated, somewhat pentagonal, rounded at the sides, truncated in front; margins strongly bisinuated in front; beak produced, slightly curved, rounded, thick, truncated by a large foramen; deltidium large and solid. Lon. 17, lat. 14, alt. 9 lines.

Terebratula Tornacensis, *D'Arch.* 1847, *Mém. Soc. Géol. Fr.* ii. p. 316. pl. 18. f. 3–5.
Terebratula Bouei, crassa, crassificata, rustica, Boubei, et Tchiatcheffei et Gravesi?, *D'Arch. id.*
Terebratula phaseolina, *Val. in Lam. Hist.* no. 29?. See *Dav. Ann. Nat. Hist.* April 1852, pl. 13. f. 29.
Terebratula subundata, *Rœmer, Kreid.* 1843, p. 42. t. 7. f. 15? (not *Sow.*).

Fossil. *Greensand* (*Tourtia*). Belgium.

24. TEREBRATULA ROISSYI. B.M.

Shell subcircular, smooth, bisinuated in front; beak small, rounded, recurved; deltidium distinct; foramen moderate. Lon. 10, lat. 10, alt. 5 lines.

Terebratula Roissyi, *D'Arch.* 1847, *Mém. Soc. Géol. Fr.* ii. p. 321. pl. 19. f. 4.
Terebratula Virleti, *Id.* f. 6.
Terebratula revoluta, *Id.* f. 3.
Terebratula subpectoralis, *Id.* f. 9.
Terebratula gussignisensis, *Id.* f. 10.
Fossil. *Greensand* (*Tourtia*). Belgium.

25. ? TEREBRATULA LENTOIDEA.

Shell suborbicular, depressed, smooth; margins even, slightly raised in front; dorsal valve round, slightly convex; beak small, strongly curved, laterally keeled; foramen small. Lon. 7½, lat. 7, alt. 3 lines.

Terebratula lentoidea, *Leym.* 1842, *Mém. Géol.* v. p. 12. t. 15. f. 10.
Reuss, Böhm. Kreid. p. 53. pl. 26. f. 13.
Terebratula lentiformis, *Leym. Mém. Géol.* iv. p. 321.
Fossil. *Greensand.* France.

26. TEREBRATULA PARVA.

Shell small, oval, inflated, smooth, with three rounded plaits in front; beak large, recurved, truncated by a large round foramen; deltidium short. Lon. 3½, lat. 3, alt. 2 lines.

Terebratula parva, *D'Arch.* 1847, *Mém. Soc. Géol. Fr.* ii. p. 322. pl. 19. f. 7.
D'Orb. Prod. ii. p. 172.
Terebratula parvula, *D'Arch. id.* pl. 19. f. 8.
Fossil. *Greensand.* Belgium.

27. TEREBRATULA SEMIGLOBOSA. B.M.

Shell nearly circular, gibbous, smooth; ventral valve deepest, and uniformly gibbous; front margin undulated, with two risings in the dorsal valve; beak thick, obtuse; foramen moderate. Lon. 15, lat. 13, alt. 11 lines.

Terebratula semiglobosa, *Sow.* 1813, *Min. Con.* i. p. 48. pl. 15. f. 9.
Dalman, 1828, *Vet. Acad.* p. 145.
D'Orb. Ter. Crét. iv. 514. f. 1–4.
Reuss, Verst. Böhm. p. 51. pl. 26. f. 6–8.
Terebratula subrotunda, *Sow.* 1813 (part.), *Min. Con.* pl. 15. f. 1.
Reuss, p. 50. pl. 41. f. 2.
Terebratula subundata, *Sow.* 1813, *Min. Con.* i. p. 47. pl. 15. f. 7.
Reuss, p. 50. t. 41. f. 7.
Terebratula carnea, *Reuss*, p. 50. f. 9–11 (not *Sow.*).
Fossil. *Chalk.* England; Belgium; France.

28. ?TEREBRATULA INCISA.

Shell oval, longer than wide; dorsal valve convex near the umbo, with a shallow sinus in front; beak recurved; foramen minute; deltidium distinct. Lon. 1–1½ inch.

Terebratula incisa (*Münster*), *Schlotheim, Cat.* p. 75. n. 71.
Buch, 1834, *Terebrat.* p. 95; *Mém. Soc. Géol. Fr.* iii. p. 204.
Bronn, Index, p. 1238.
Pusch, Polens Pal. t. 3. f. 16. p. 19?.

Fossil. *Chalk.* Poland; Faroë.

29. TEREBRATULA OBESA. B.M.

Shell oblong, ventricose, smooth; front margin with a wide and shallow central depression and two angular lateral depressions; sides obscurely striated; beak short and thick, incurved, truncated by a large round foramen; deltidium concealed; loop short and simple. Lon. 2½, lat. 2, alt. 1½ inch.

Terebratula obesa, *Sow.* 1825, *Min. Con.* v. p. 54. t. 438. f. 1.
Brown, Illust. Conch. pl. 54. f. 28, 29.
D'Orb. Ter. Crét. iv. p. 101. pl. 513. f. 1–4.
Davidson, Mon. Cret. p. 33. pl. 5. f. 13–16.

Fossil. *U. Chalk, U. Greensand.* England; France.

30. TEREBRATULA SULCIFERA. B.M.

Shell oval, inflated, smooth, ornamented with numerous imbricating lines of growth in regular series from the umbones to the margin; valves nearly equally ventricose; margins sinuous, elevated in front; beak short, very thick, rounded and recurved; foramen large and round; deltidium concealed. Lon. 22, lat. 16, alt. 16 lines.

Terebratula sulcifera, *Morris & Dav.* 1847, *Ann. Nat. Hist.* 1847, p. 254. pl. 18. f. 7.
D'Orb. Prod. ii. p. 172.

Terebratula ovoides, *Rœmer*, 1843, *Kreid.* p. 42 (not *Sow.*).
Alth, Geog. Lemberg (*in Haid. Abhandl.* 1850), p. 258. t. 13. f. 5.
Geinitz, Petref. 1850, t. 8. f. 5.

Fossil. *Chalk-Marl.* England; Germany.

31. TEREBRATULA ALBENSIS. B.M.

Shell oval, inflated, smooth, with obscure lines of growth, becoming more distinct towards the margin; margins flexuous, the front straight, wide, angularly elevated; dorsal valve convex, circular in young specimens; ventral valve gibbose; beak thick, rounded, recurved; foramen moderate, round; deltidium concealed. Lon. 19, lat. 14, alt. 12 lines.

Terebratula albensis, *Leym.* 1841, *Mém. Géol.* iv. 288, 289; v. 11, 29. t. 15. f. 2–4.
Terebratula bulla, *J. Sow.* 1850, *Dixon's Geol. Sussex*, p. 346. pl. 27. f. 11.
Terebratula semiglobosa, var. γ, *Bronn, Index*, p. 1250.
Reuss, Verst. Böhm. Kreid. p. 51. pl. 26. f. 5.
Fossil. *Lower Chalk.* Sussex; Rouen.

32. TEREBRATULA HARLANI. B.M.

Shell oval, elongated, thick, smooth, with concentric lines of growth; dorsal valve moderately convex, raised and flat in the centre, depressed at the sides; margins even, slightly elevated in front; ventral valve deep; beak thick, recurved, slightly keeled at the sides; foramen very large; deltidium nearly concealed. Lon. 26, lat. 16, alt. 15 lines. (Lon. 36 lines, *Morton.*)

Terebratula Harlani, *Morton*, 1829, *Acad. Nat. Sc. Philad.* p. 73. pl. 3. f. 1; 1834, *Syn. Cret.* p. 70. pl. 3. f. 1.
Terebratula Camilla, *Morton, Syn. Cret.* pl. 9. f. 8, 9.
Terebratula perovalis?, *Morton*, 1829, *Journ. Philad.* p. 77. pl. 3. f. 7, 8 (not *Sow.*).
Fossil. *Chalk.* New Jersey, U.S.

33. TEREBRATULA FRAGILIS.

Shell elongated, oval, thin, fragile, smooth, strongly biplicated in front; dorsal valve with two longitudinal ridges almost its whole length; ventral valve with a prominent central ridge, and corresponding lateral depressions. Lon. 21, lat. 12 lines.

Terebratula fragilis, *Morton*, 1829, *Journ. Acad. Philad.* p. 75. pl. 3. f. 3, 4; 1834, *Syn. Cret.* p. 70. pl. 3. f. 2 (not *Schl.*).
Terebratula subfragilis, *D'Orb.* 1850, *Prod.* ii. p. 258.
Fossil. *Chalk.* New Jersey, U.S.

34. ?TEREBRATULA TOUCASIÁNA.

Shell like *T. semiglobosa*, but always more depressed, most prominent at the front margin.

Terebratula Toucasiana, *D'Orb.* 1850, *Prod.* ii. p. 258.
Fossil. *Chalk.* France.

35. ?TEREBRATULA VENDOCINENSIS.

Shell small, globular, round, smooth; front margins sinuated; dorsal valve scarcely convex.

Terebratula Vendocinensis, *D'Orb.* 1850, *Prod.* ii. p. 258.
Fossil. *Chalk.* France.

36. TEREBRATULA PRÆLONGA. B.M.

Shell ovate, much elongated, gibbose; front slightly elevated, with a depression in its middle; beak prominent, large; surface smooth. Lon. 14, lat. 7 lines. (Lon. 18, lat. 12, alt. 9 lines, *Morris*.)

Terebratula prælonga, *J. Sow.* 1836, *Geol. Trans.* iv. 2. p. 339. pl. 14. f. 14.

Fossil. *Neocomian.* England; France; Germany; Switzerland.

37. TEREBRATULA ACUTA. B.M.

Shell oblong, elongated, somewhat pentagonal, sharply biplicate, depressed at the sides, smooth; margins even, strongly bisinuated in front; beak prominent, scarcely curved; foramen rather large; deltidium elongated. Lon. 14, lat. 11, alt. 6 lines.

Terebratula biplicata-acuta, *Buch*, 1843, *Mém. Soc. Géol. Fr.* iii. p. 220.
Terebratula prælonga, *D'Orb. Ter. Crét.* iv. p. 74. t. 506. f. 1–4.
Terebratula acuta, *Quenst.* 1851, *Handb.* p. 473. t. 38. f. 2.

Fossil. *Neocomian.* France; Switzerland.

38. TEREBRATULA SELLA. B.M.

Shell subquadrangular, smooth; front considerably elevated, narrow, sharply bisinuated; sides depressed; beak slightly recurved; foramen moderate, round; deltidium rather large, solid. Lon. 15, lat. 13, alt. 7 lines.

Terebratula Sella, *Sow. M. C.* 1823, v. p. 53. t. 437. f. 1.
D'Orb. Ter. Crét. iv. t. 510. f. 6–12.
Rœmer, Kreid. 1843, p. 43. t. 7. f. 17.
Terebratula Rœmeri, *D'Archiac, Mém. Géol. Soc. Fr.* ii.
Terebratula undulata, *Pusch, Polens Pal.* p. 20. t. 4. f. 4.
Kner, Kreid. Lemberg (*in Haid. Abhandl.* 1850), p. 32.

Fossil. *Neocomian, Gault, U. Greensand:* England; France.

39. TEREBRATULA MOUTONIANA. B.M.

Shell ovate, depressed, smooth, finely striated concentrically; dorsal valve rather flat, slightly raised in the centre in front; ventral valve convex; beak recurved; foramen rather large; deltidium partly concealed. Lon. 20, lat. 13, alt. 8 lines.

Terebratula Moutoniana, *D'Orb. Ter. Crét.* iv. p. 89. t. 510. f. 1–5; *Prod.* 2. p. 108.
Terebratula perovalis, *Rœmer*, 1839 (not *Sow.*), *Ool.* t. 2. f. 3; *Kreid.* p. 42.

Fossil. *Neocomian.* France; Germany.

40. TEREBRATULA CARTERONIANA.

Shell roundly angulated, ventricose, smooth; margins bisinuated; beak contracted, slightly curved; foramen small, round; deltidium inconspicuous; dorsal valve with two small, elevated folds in front. Lon. 13, lat. 12, alt. 11 lines.

Terebratula Carteroniana, *D'Orb. Ter. Crét.* iv. p. 80. t. 507. f. 1–5; *Prod.* 2. p. 85.

Fossil. *Neocomian.* France.

41. TEREBRATULA ARABILIS.

Shell suborbicular, depressed, concentrically ploughed with numerous regular shallow furrows; front margins obscurely bisinuated; beak recurved, truncated by a large foramen. Lon. 16, lat. 14, alt. 7 lines.

Terebratula arabilis, *Forbes*, 1846, *Trans. Geol. Soc.* vii. pt. 3. p. 138. pl. 18. f. 12.
D'Orb. Prod. ii. p. 258.

Fossil. *Chalk.* S. India.

42. TEREBRATULA INCA. B.M.

Shell orbicular, depressed, smooth; lines of growth very obscure, except near the margin; valves nearly equally convex, slightly bisinuated in front; beak short, recurved, obscurely keeled at the sides; foramen large and circular; deltidium wide and short. Lon. 21, lat. 20½, alt. 12 lines.

Terebratula Inca, *Forbes*, 1846, *in Darwin's Geol. S. Amer.* p. 268. pl. 5. f. 19, 20.

Fossil. *Cretaceous limestone.* Iquique, Peru.

43. TEREBRATULA LONGA. B.M.

Shell elongated, elliptical, smooth; margins even, slightly elevated in front; dorsal valve depressed, pointed at the umbo, slightly truncated in front; ventral valve convex; beak produced, curved, keeled; foramen rather large; deltidium distinct, solid. Lon. 16, lat. 9, alt. 7 lines.

Terebratula longa, *Zieten*, 1830, *Petr.* p. 52. pl. 39. f. 7.
D'Orb. Prod. i. p. 344.
Terebratula biplicata, *Bronn, Index*, p. 1241 (not *Sow.*).
Terebratula lagenalis, *Braun* (not *Schl.*).

Fossil. *Coral Rag.* Wurtemberg; Bavaria; Switzerland.

44. TEREBRATULA INSIGNIS. B.M.

Shell oval, smooth; front margin angularly raised; dorsal valve much flattened from the umbo to the front margin; beak

produced, recurved; foramen large; deltidium distinct, in one piece; loop simple, short. Lon. 20, lat. 15, alt. 11 lines. (Max. lon. 3, lat. 2. unc.)

Terebratula insignis (*Schübler*), *Zieten*, 1830, *Verst. Würt.* p. 53. pl. 40. f. 1.
D'Orb. Prod. i. p. 376.
Quenstedt, Flöz. Würt. p. 484.
Davidson, Mon. Ool. p. 47. pl. 13. f. 1.
Quenst. Handb. p. 472. t. 38. f. 1.
Terebratula perovalis, *Buch, Mém. Soc. Géol. France.*
Pusch, Polens Pal. p. 22. t. 4. f. 5, 7, 8 (not *Sow.*).
Terebratula biplicata, *Bronn, Index*, ii. p. 1239 (not *Sow.*).
Fossil. *Coralline Oolite, Oxford Clay.* England; France; Germany.

45. TEREBRATULA BISUFFARCINATA. B.M.

Shell oval, smooth; margins bisinuated in front; dorsal valve convex, depressed at the sides; beak thick, rounded and recurved. Lon. 22, lat. 16, alt. 12 lines.

Terebratulites bisuffarcinatus, *Schl.* 1820, *Petr.* no. 50. p. 279; *Enc. Méth.* t. 239. f. 3.
Terebratula bisuffarcinata, *Zieten, Verst. Würt.* p. 53. pl. 40. f. 3.
Terebratulites bicanaliculatus, *Schl.* 1813, *Min. Tasch.* p. 104 (name only); 1820, *Petref.* p. 278. no. 49?
Terebratula bicanaliculata, *Zieten*, p. 54. pl. 40. f. 5?
D'Orb. Prod. i. p. 344 (excl. *synonyms*).
Terebratula ovalis, *Val.* 1819, *in Lam. Hist. An. sans Vert.*?
Dav. Ann. Nat. Hist. June 1850, pl. 13. f. 16.
Fossil. *White Jura* (*Coral Rag*). Germany; France; Italy; India?

46. ? TEREBRATULA REPELINIANA.

Shell oblong; beak of the larger valve much produced.

Terebratula Repeliniana, *D'Orb.* 1850, *Prod.* ii. p. 25.
Fossil. *Coral Rag.* France.

47. ? TEREBRATULA SUBSELLA. B.M.

Shell like *T. perovalis*, but broader, and more deeply plaited.

Terebratula subsella, *Leymerie*, 1846, *Stat. de l'Aube*, pl. 10. f. 5.
Fossil. *Kim. Clay and Coral Rag.* France.

48. ? TEREBRATULA EQUESTRIS.

Shell like *T. subsella*, but with the larger valve produced in front, forming a single, prominent, obtuse angle.

Terebratula equestris, *D'Orb.* 1850, *Prod.* ii. p. 24.
Fossil. *Coral Rag.* France.

49. ? TEREBRATULA BAUGIERI.

"*Shell* small, the size of a pea, oval, very globular, obtuse and rounded in front, larger valve with two projections, not forming points."

Terebratula Baugieri, *D'Orb.* 1850, *Prod.* i. p. 377.
Fossil. *Oxford Clay.* France.

50. ? TEREBRATULA GARANTIANA.

"Like *T. biplicata*, but with the two plaits close together; it is also broader, and wants the radiating striæ."

Terebratula Garantiana, *D'Orb. Prod.* i. 1850, p. 287.
Fossil. *Inferior Oolite.* France.

51. ? TEREBRATULA DESCHAMPSII.

"*Shell* like *T. biplicata*, but with the middle plait so deep as to form a notch (sillon) in the front of the larger valve."

Terebratula Deschampsii, *D'Orb. Prod.* 1850, p. 287.
Fossil. *Inferior Oolite.* France.

52. ? TEREBRATULA ERINA.

"Like *T. biplicata*, but shorter, more ventricose, the anterior fold narrower."

Terebratula Erina, *D'Orb.* 1847, *Prod.* i. p. 240.
Fossil. *Lias.* Normandy.

53. ? TEREBRATULA MACEANA.

Shell small, globular, round, furnished with a deep sinus in the small valve to receive the projection of the other.

Terebratula Maceana, *D'Orb.* 1847, *Prod.* i. p. 221.
Fossil. *Lias.* France.

54. ? TEREBRATULA ORBICULATA.

Shell orbicular, smooth; dorsal valve rather flat; ventral valve convex; beak short, thick; foramen large and round; deltidium double, distinct. Lon. 12, lat. 12, alt. 6 lines.

Terebratula orbiculata, *Rœmer*, 1836, *Nordd. Ool.* p. 52. t. 2. f. 6.
Fossil. *Coral Rag.* Saxony.

55. TEREBRATULA VENTRICOSA.

Shell oval, ventricose, depressed at the sides; valves ornamented with fine radiating striæ, crossed by obscure lines of growth; margins even, raised, but not sinuated in front; beak recurved; foramen small. Lon. 25, lat. 19, alt. 13 lines.

Terebratula ventricosa (*Hartmann*), *Zieten*, 1830, p. 53. pl. 40. f. 2 (not *Gmelin*).
Terebratula subventricosa, *D'Orb. Prod.* p. 287.
Terebratula perovalis, *Rœmer, Nordd. Ool.* t. 2. f. 3? (not *Sow.*).
Fossil. *Inferior Oolite.* Germany; France.

56. TEREBRATULA INTERMEDIA. B.M.

Shell oval, smooth; front with a central and two lateral indistinct depressions; beak short, rounded, recurved; foramen rather large; deltidium nearly concealed; loop simple, short. Lon. 23, lat. 18, alt. 13 lines.

Terebratula intermedia, *Sow.* 1812, *Min. Con.* i. p. 48. t. 15. f. 8.
Davidson, Mon. Ool. p. 52. pl. 11. f. 1–5.
Quenstedt, 1851, *Handb.* p. 472. t. 37. p. 50 (not of *Buch* and *Mantell*).
Terebratula biplicata, *Pusch, Polens Pal.* p. 21. t. 4. f. 1?.
Fossil. *Cornbrash.* England; France.

57. TEREBRATULA MAXILLATA. B.M.

Shell subquadrangular, smooth; valves strongly folded in front; dorsal valve broad and short, moderately convex, with one central and two lateral depressions, increasing in depth with age; beak produced, recurved, with obtuse lateral ridges; foramen large, oblique; deltidium obtusely triangular; loop simple, one-third as long as the shell. Lon. 32, lat. 34, alt. 18 lines.

Terebratula minor subrubra, *Llhwyd, Lith. Brit. Icon.* 1699, pl. 11. f. 890.
Terebratula maxillata, *Sow.* 1825, *Min. Con.* p. 52. pl. 436. f. 4.
Morris & Dav. Ann. Nat. Hist. 1847, pl. 19. f. 5.
Davidson, Mon. Ool. p. 50. pl. 9. f. 1–9.
Terebratula biplicata, *Bronn, Index* (not *Sow.*).
Terebratula tetragona, *Pusch*, 1837, *Polens Pal.* p. 23. t. 4. f. 9?.
β. Terebratula submaxillata (*Morris*), *Davidson, Mon. Ool.* p. 51. pl. 9. f. 10–12.
Fossil. *Great Oolite.* England; France. (β.) *Inf. Oolite.* England.

58. TEREBRATULA GLOBATA. B.M.

Shell oval, ventricose, smooth; front with a central and two lateral depressions; beak rounded, recurved; foramen moderate, round; deltidium concealed, small; loop simple, short. Lon. 13, lat. 11, alt. 10 lines.

β. Longer and less globular. Cotteswolde Hills.

Terebratula globata, *Sow.* 1825, *Min. Con.* p. 51. pl. 436. f. 1.
Davidson, Mon. Ool. p. 54. pl. 13. f. 2–7.
Terebratula Kleinii, *Morris, Desh., D'Orb., Bronn* (not *Lamarck*).
Terebratula biplicata, *Pusch, Polens Pal.* p. 21. t. 4. f. 3?.

Fossil. *Inferior Oolite.* S. of England; France.

59. TEREBRATULA PHILLIPSII. B.M.

Shell oblong, elongated, tapering towards the beak, smooth; front strongly biplicate; beak produced; foramen moderate, round; deltidium large and distinct. Lon. 28, lat. 20, alt. 13 lines.

Terebratula Phillipsii, *Morris*, 1847, *Ann. Nat. Hist.* p. 255. pl. 18. f. 9.
D'Orb. Prod. i. p. 287.
Davidson, Mon. Ool. p. 53. pl. 11. f. 6–8.

Fossil. *Inferior Oolite.* England; France.

60. TEREBRATULA PEROVALIS. B.M.

Shell oval, elongated, smooth; front margin with a central and two lateral depressions, or with a nearly straight central elevation and angular lateral depressions; beak large, rounded, with indistinct lateral ridges; foramen large, entire; deltidium generally concealed; loop simple, short. Lon. 33, lat. 28, alt. 23 lines (large specimen).

Terebratula perovalis, *Sow.* 1825, *Min. Con.* v. p. 51. t. 436. f. 2, 3.
Buch, Mém. Soc. Géol. France, iii. p. 221. pl. 20. f. 2.
Davidson, Mon. Ool. p. 51. pl. 10. f. 1–6.
Quenst. Handb. p. 471. t. 37. f. 49–51.
Terebratula ovoidea (of Collectors).
Terebratula Kleinii, *Valenciennes?*, 1819.

Fossil. *Inferior Oolite.* England; France.

61. TEREBRATULA KLEINII.

Shell oval, depressed, with two blunt projecting angles in front; smooth, or with only fine lines of growth; margins bisinuated in front; beak large and thick, recurved, strongly keeled at the sides; foramen large and round; deltidium nearly concealed. Lon. 30, lat. 26 lines.

Terebratula Kleinii, *Val. in Lam.* 1819, *An. sans Vert.* vi. p. 252. no. 33 (not of *Morris' Cat.*).
Dav. Ann. Nat. Hist. 1850, June, pl. 13. f. 33.
Fossil. *Inferior Oolite.* France.

62. TEREBRATULA HOMALOGASTER. B.M.

Shell subcircular, depressed, smooth, with strong lines of growth near the margin; front margin slightly raised; dorsal valve nearly flat, circular; ventral valve convex; beak very thick, recurved, obscurely keeled; foramen very large; deltidium solid. Lon. 18, lat. 16, alt. 9 lines.

Terebratula omalogaster (*Hehl.*), *Zieten*, 1830, p. 54. pl. 40. f. 4 (deformed?, *D'Orb.*).
Terebratula perovalis, *Bronn, Index*, p. 1243.
Fossil. *Inferior Oolite.* Germany.

63. TEREBRATULA SIMPLEX. B.M.

Shell roundish, smooth; margins even; dorsal valve flattish, a little concave in front; larger valve ventricose; beak rounded, recurved; foramen large and round; deltidium nearly concealed. Lon. $2\frac{4}{12}$, lat. $2\frac{1}{12}$, alt. $1\frac{5}{12}$ inches.

Terebratula triangularis maxima, *Llhwyd*, 1699, *Lith. Brit.* ed. 2. t. 25. f. 870.
Terebratula simplex, *Buckman, Geol. Chelt.* pl. 7. f. 5.
Davidson, Mon. Ool. p. 48. pl. 8. f. 1, 3.
Terebratula lata, *D'Orb.* (not *Sow.*).
Fossil. *Inferior Oolite.* England.

64. TEREBRATULA OVOIDES. B.M.

Shell oval, smooth, ventricose; margins even; beak prominent, slightly keeled; foramen large and round; deltidium distinct, double. Lon. 2, lat. $1\frac{8}{12}$, alt. $1\frac{1}{12}$ inches.

Terebratula ovoides, *Sow.* 1812, *Min. Con.* i. p. 227. t. 100.
Young & Bird, Geol. Yorks. pl. 8. f. 12.
Lam. ed. Desh. vii. p. 361.
Davidson, Mon. Ool. p. 48. pl. 8. f. 4–9.
Terebratula lata, *Sow.* 1812, *Min. Con.* i. p. 227. t. 100.
Terebratula trilineata, *Young & Bird, Geol. Yorks.* 1828, pl. 8. f. 17 (internal cast).
Fossil. *Lias, Inferior Oolite.* England.

65? TEREBRATULA BUCKMANII. B.M.

Shell elongated, oval; valves smooth, convex; beak small, lateral ridges indistinct; foramen round, large; deltidium con-

cealed; front margin a little raised. Lon. 18, lat. 11, alt. 8 lines.

Terebratula Buckmanii, *Dav. Mon. Ool.* i. p. 44. pl. 7. f. 15, 16.
Fossil. *Inferior Oolite.* Cheltenham.

66. TEREBRATULA PUNCTATA. B.M.

Shell oval, depressed, smooth; small valve rather flat; front margin a little raised; beak small, slightly recurved, with evanescent ridges; foramen moderate; deltidium double; loop simple, short, nearly half as long as the dorsal valve. Lon. 16, lat. 12, alt. 7 lines.

Terebratula punctata, *Sow.* 1812, *Min. Con.* i. p. 46. t. 15. f. 4.
Morris, Catal. 136.
Davidson, Mon. Ool. p. 45. pl. 6. f. 1–6.
Fossil. *Lias.* England.

67. ? TEREBRATULA SUBPUNCTATA. B.M.

Shell smooth, oval, ventricose; margin slightly raised in front; beak rounded, recurved, with lateral ridges soon becoming indistinct; foramen rather large; deltidium concealed; loop a little more than one-third the length of the shell. Lon. 28, lat. 20, alt. 17 lines.

Terebratula subpunctata, *Dav. Mon. Ool.* p. 46. pl. 6. f. 7–10.
Fossil. *Lias.* Somerset; France.

68. ? TEREBRATULA INDENTATA. B.M.

Shell elliptical, smooth; front margin sometimes notched when adult; valves nearly equally convex; beak recurved, lateral ridges soon lost; foramen entire; loop simple, short. Lon. 14, lat. 10, alt. 9 lines (largest specimen).

Terebratula indentata, *Sow.* 1825, *Min. Con.* v. p. 65. t. 445.
Davidson, Mon. Ool. p. 46. pl. 5. f. 25, 26.
Terebratula digona, *D'Orb. Prod.* p. 315 (part.), not *Sow.*
Terebratula punctata, var. (*Waterhouse, in Brit. Mus.*).
Fossil. *Lias.* England.

69. TEREBRATULA EUGENII.

Shell oval, obtuse in front, tapering to the beak; smooth, with obscure radiating lines at the sides; *dorsal* valve ventricose, especially near the umbo; *ventral* valve curved, flattened and furrowed in the middle; beak long and pointed; foramen minute; deltidium elongated, double. Lon. 16, lat. 11, alt. 8 lines.

Terebratula Eugenii (*Buch*), *Davidson*, 1849, *Bull. Soc. Géol. Fr.* vii. p. 74. pl. 1. f. 16–20.

Fossil. *Lias.* Normandy.

70. TEREBRATULA MARSUPIALIS.

Shell oblong, smooth, with obscure lines of growth; dorsal valve convex, depressed at the sides; ventral valve depressed; beak small, recurved, keeled; foramen minute. Lon. 12, lat. 8, alt. 6 lines.

Terebratulites marsupialis, *Schl.* 1820, *Petr.* p. 282?, *Enc. Méth.* t. 240. f. 3?.

Terebratula marsupialis, *Zieten*, 1830, *Würt.* p. 53. pl. 39. f. 9.
D'Orb. Prod. i. p. 221.

Terebratula lagenalis, *Bronn, Index*, p. 1241 (not *Schl.*).

Fossil. *Lias.* France; Wurtemberg.
Coral Rag?. Bavaria.

71. TEREBRATULA BULLATA. B.M.

Shell oblong, inflated, smooth; margins obscurely bisinuated in front; valves nearly equally gibbose; beak much inflated, closely recurved, keeled; foramen small; deltidium concealed; loop short, simple. Lon. 15, lat. 12, alt. 12 lines.

Terebratula bullata, *Sow.* 1825, *Min. Con.* v. p. 49. t. 435. f. 4.
Lam. ed. Desh. vii. p. 362.
Buch, Mém. Soc. Géol. Fr. iii. p. 195. pl. 18. f. 8.
Zieten, Verst. Würt. t. 40. f. 6.
Deslong. 1837, *Soc. Lin. Normandie.*
Morris, Cat. p. 132.
Bronn, Index, p. 1231 (excl. *syn.*).

Terebratula sphæroidalis, var., *Davidson, Mon. Ool.* p. 56. pl. 11. f. 10, 14–19.

Fossil. *Inferior Oolite.* S. of England; Germany; France.

72. ?TEREBRATULA GALLIENNEI.

Like *T. bullata*, but more oval; beak less curved; larger valve advanced at two distant points, without much projecting.

Terebratula Galliennei, *D'Orb.* 1850, *Prod.* i. p. 377.

Fossil. *Oxford Clay.* France.

73. TEREBRATULA SPHÆROIDALIS. B.M.

Shell subcircular, ventricose, smooth; margins even, in the young shell, usually crenulated in old specimens, especially in front; borders obtuse, or flattened; beak rounded, curved; fora-

men moderate; deltidium triangular, concave; loop short, simple. Lon. 13, lat. 12, alt. 10 lines.

Terebratula sphæroidalis, *Sow.* 1825, *Min. Con.* v. p. 49. t. 435. f. 3.
Deslong. 1837, *Soc. Lin. Normand.*
Morris, Cat. p. 136.
D'Orb. Prod. i. p. 287.
Dav. Mon. Ool. p. 56. pl. 11. f. 9, 11, 12, 13.

Fossil. *Inferior Oolite.* England; France; Germany.

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74. TEREBRATULA FIMBRIA. B.M.

Shell orbicular, smooth when young; margins more or less plaited when adult; plications rounded, numerous, often subdivided; beak short, recurved, nearly concealing the deltidium; foramen large and round; loop simple, short. Lon. 20, lat. 18, alt. 13 lines.

Terebratula fimbria, *Sow.* 1823, *Min. Con.* iv. p. 27. t. 326.
Davidson, Mon. Ool. p. 61. pl. 12. f. 6–12.

Fossil. *Inferior Oolite.* Gloucestershire; France (Sarthe).

75. TEREBRATULA PLICATA. B.M.

Shell elongated, oval, smooth when young; margins more or less plaited when adult; plaits short, simple, rounded; umbo of dorsal valve gibbose; larger valve with a short, scarcely recurved beak; foramen round; deltidium small; loop short, simple. Lon. 33, lat. 22, alt. 17 lines.

Terebratula plicata, *Buckman,* 1845, *Geol. Chelt.* pl. 7. f. 6.
Davidson, Mon. Ool. p. 60. pl. 12. f. 1–5 (not *Lam.*).
Terebratula subplicatella, *D'Orb.* 1849, *Prod.* i. p. 287.

Fossil. *Inferior Oolite.* England; France.

76. TEREBRATULA SUBORBICULARIS. B.M.

Shell oval, inflated, smooth at the umbones, rather sharply plaited round the border; beak laterally compressed, thick, curved, truncated by a rather large foramen. Lon. 8, lat. 6, alt. 4½ lines.

Terebratula suborbicularis, *Münst.* 1841, *Beitr.* iv. p. 56. pl. 6. f. 4.
D'Orb. Prod. i. p. 204.
Terebratula semiplicata, *Klipstein,* 1844, *Beitr.* p. 214. pl. 15. f. 3.
Rhynchonella! semiplicata, *D'Orb. Prod.* i. p. 203.

Fossil. *Trias.* Tyrol.

77. TEREBRATULA FLABELLUM. B.M.

Shell transversely oval, deeply plaited; plaits 7–9, simple, rounded, imbricated by lines of growth; beak produced, foramen round; deltidium obtusely triangular, double; loop short, simple?. Lon. 5–6, lat. 5–8, alt. 3–4 lines.

Terebratula flabellum, *Defr.* 1828, *Dict. Sc. Nat.* liii. p. 160.
Morris & Dav. Ann. Nat. Hist. 1847, p. 256. pl. 19. f. 2.
D'Orb. Prod. i. p. 316.
Dav. Mon. Ool. p. 62. pl. 12. f. 19–21.
Terebratula palmetta, *Deslongchamps*, 1837, *Soc. Lin. Normandie.*
Bronn, Index, p. 1244.
Terebratula septemcostata, *Münster, MS.*
Fossil. *Bath Oolite* (*Bradford Clay*). England; France.

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78. TEREBRATULA MOREANA.

Shell trigonally ovate, depressed, smooth; margins sharply sinuated; beak prominent, laterally keeled; foramen moderate, round; deltidium small, triangular; dorsal valve with a sharp central elevated fold and two obscure lateral ridges. Lon. 13, lat. 11, alt. 7 lines.

Terebratula Moreana, *D'Orb. Ter. Crét.* iv. p. 79. t. 506. f. 13–16; *Prod.* ii. p. 58.
Fossil. *Neocomian.* France.

79. TEREBRATULA BENTLEYI. B.M.

Shell somewhat pentagonal, smooth; dorsal valve rather flat, truncated or indented in front, with a central and two lateral elevations; ventral valve deep, with beak prominent, recurved and keeled; foramen moderate; deltidium double, distinct. Lon. 16, lat. 18, alt. 11 mill.

Terebratula Bentleyi (*Morris*), *Davidson, Mon. Ool.* 1851, p. 58. pl. 13. f. 9–11.
β. Terebratula sub-Bentleyi, *Dav. Mon. Ool.* 1851, p. 59. pl. 13. f. 11.
Fossil. *Cornbrash.* Rushden, Northamptonshire (Griesbach).
Inferior Oolite. (β.) Minchinhampton (Lycett); Germany (Brit. Mus.).

80. TEREBRATULA SUBCANALIS.

Shell oval, somewhat pentagonal, smooth; dorsal valve flat, with two diverging furrows; ventral valve convex, with a deep

central furrow; beak recurved, thick, rounded; foramen moderate. Lon. and lat. 6, alt. 4 lines.

Terebratula subcanalis, *Münster, in Cambridge Museum.*

Fossil. *Oxford Clay.* Bavaria.

81. TEREBRATULA COARCTATA. B.M.

Shell somewhat pentagonal, ornamented with radiating spinulose striæ, decussated by numerous lines of growth; dorsal valve curved, with an angular median ridge and more or less distinct lateral furrows; front straight or indented; ventral valve deep, with a prominent beak; foramen moderate, round; deltidium distinct; loop short, simple. Lon. 12, lat. 11, alt. 8 lines.

Terebratula coarctata, *Park.* 1811, *Org. Rem.* iii. pl. 16. f. 5.
Sow. 1823, *Min. Con.* iv. p. 7. t. 312. f. 1–4.
Bronn, Index, ii. p. 1232.
D'Orb. Prod. i. p. 316.
Davidson, Mon. Ool. p. 59. pl. 12. f. 12–15.
Quenst. Handb. p. 465. t. 37. f. 21.

Terebratula reticulata, *Smith*, 1816, *Org. Foss.* p. 83. pl. 30. f. 10.
Sow. 1823, *Min. Con.* t. 312. f. 5–6 (et decussata).
Deslong. Soc. L. Norm.
Quenst. Handb. p. 464. t. 37. f. 20.

Terebratula decussata, *Val. in Lam.* 1819, *An. sans Vert.* vi. no. 51; *Enc. Méth.* t. 245. f. 4.
Dav. Ann. Nat. Hist. June 1850, pl. 14. f. 51.

Terebratula reticularis, *Schloth. Petref.* i. p. 269.
Buch, Mém. Soc. Géol. France, p. 185. pl. 17. f. 7.

Fossil. *Bath Oolite* (*Bradford Clay*). England; France.

82. ? TEREBRATULA RICHARDIANA.

Like *T. reticulata*, but much narrower, more elongated, and more strongly reticulated.

Terebratula Richardiana, *D'Orb.* 1850, *Prod.* i. p. 377.

Fossil. *Oxford Clay.* France.

83. TEREBRATULA MORIEREI.

Shell pentagonal, deeply indented in front; valves ornamented with concentric, imbricated ridges, both deeply furrowed in the middle; beak rather short, recurved, laterally keeled; foramen moderate, round; deltidium distinct. Lon. 9, lat. 8, alt. 6 lines.

Terebratula Morierei (*Deslongchamps, MS.*), *Davidson*, April 1852, *Ann. Nat. Hist.* pl. 14. f. 3.

Fossil. *Inferior Oolite.* Normandy.

84. TEREBRATULA ANTIPLECTA.

Shell obovate, ventricose, smooth; margin strongly sinuated in front; dorsal valve convex, with two front and two lateral depressions; ventral valve with three depressions in front; beak not prominent; foramen minute; deltidium double, triangular. Lon. 8, lat. 7, alt. 5 lines.

Terebratula antiplecta, *Buch*, 1834, *Ueber Ter.* 80. t. 2. f. 39; *Mém. Soc. Géol. Fr.* 1838–39, t. iii. p. 187, pl. 17. f. 8.
Bronn, Index, p. 1229.
Quenst. 1851, *Handb.* p. 465.

Fossil. *Jura* (*Alpenkalk*?). Near Salzburg, Tyrol.

85. TEREBRATULA INVERSA. B.M.

Shell pentagonal, deeply folded, smooth; margins strongly 3-plaited; dorsal valve flat near the umbo, with two deep angular furrows in front; ventral valve with a central and two lateral depressions; beak small. Lon. & lat. 6, alt. 3½ lines.

Terebratula inversa, *Quenstedt*, 1851, *Handb.* p. 465. t. 37. f. 22.

Fossil. *Trias* (*Alpenkalk*). Hallstadt.

86. TEREBRATULA REFLEXA.

Shell small, subpentagonal, tumid, smooth; dorsal valve much depressed in front, with a small longitudinal ridge in the middle; ventral valve with two longitudinal rounded ridges divided by a small central furrow, sides depressed; beak small, curved; aperture minute; area very wide. Lon. 4, lat. 4, alt. 2½ lines.

Terebratula reflexa, *Koninck*, 1844, *Descr.* p. 298. pl. 20. f. 4.
D'Orb. Prod. i. p. 151.

Fossil. *Carb.* Belgium.

87? TEREBRATULA NUCLEATA. B.M.

Shell subcircular, smooth, with a deep, rounded sinus in the centre of the dorsal valve in front; ventral valve with a slight dorsal ridge; beak very prominent, inflated, recurved; foramen moderate; deltidium concealed; loop very small. Lon. 8, lat. 8, alt. 6 lines.

Terebratula nucleata, *Schlotheim*, 1820, *Petr.* p. 281.
Buch, Mém. Soc. Géol. Fr. iii. pl. 20. f. 10.
Zieten, 1830, *Petref.* p. 53. pl. 39. f. 10.
Quenst. Handb. p. 469. t. 37. f. 40–45.

Fossil. *Coral Rag.* Germany; France.

88. TEREBRATULA TRIQUETRA. B.M.

Shell triangular, smooth, depressed, truncated in front, the angles produced and rounded; sides nearly straight; beak obtuse, recurved, keeled; foramen moderate, round; deltidium nearly concealed. Lon. 17, lat. in front 18 lines.

Terebratula pileus, (*Brug.*) *E. M.* t. 241. f. 1. *a*, *b*, *c*.
Bronn, Index, p. 1245.
Terebratula triquetra, *Parkinson*, 1811, *Org. Rem.* iii. pl. 16. f. 8.
D'Orb. Prod. i. p. 344.
Dav. Ann. Nat. Hist. June 1850, pl. 13. f. 21.
Terebratula triangulus, *Val.* 1819, *in Lam. An. s. Vert.* no. 21.
Terebratula mutica, *Catullo*, 1830, *Geogn. Zool.* xxii. t. 2. f. 4.
Fossil. *Kelloway Rock*?. France (Gigondas).

89. TEREBRATULA DIPHYA. B.M.

Shell smooth, triangular, depressed, gibbose at the margins; when young two-lobed, the lobes coalescing in the adult, leaving a roundish opening (about 3 lines in diameter) through the centre of both valves; from this opening a sharp furrow passes to the front margin of each valve; margins even; sides slightly hollowed; front indented in the middle; angles rounded; beak rounded and recurved; foramen moderate, round; loop ?. Lon. 19, lat. 20, alt. 9 lines.

Concha diphya, *F. Colonna*, 1606, *Ecphras. Stirp.* 36. 49.
Terebratula diphya, *Buch, Ueber Terebrateln*, p. 88. t. 1. f. 12; *Mém. Soc. Géol. France*, iii. p. 196. pl. 18. f. 9.
Pusch, Polens Pal. 15. t. 3. f. 13.
Dav. Ann. Nat. Hist. June 1850, pl. 13. f. 20.
Quenst. Handb. p. 470. t. 37. f. 46.
Terebratula deltoidea, *Valenciennes*, 1819, *in Lam. Hist. Nat. Brug. Enc. Méth.* 1797, t. ii. pl. 240. f. 4.
Terebratula triquetra, *Parkinson* (part.), *Org. Rem.* iii. 229. t. 16. f. 4, 8.
Terebratula antinomia, *Catullo*, 1827, *Cat. Zool.* 169. t. 5; *Geogn. Zool.* t. 2. f. 3.
Terebratula Duvallii, *Newman*, 1844, *Zoologist*, p. 679 (figures).
Pygope diphya (*Link*), *King*, 1840, *Permian Fossils*, pp. 81, 144.
Fossil. *Kelloway Rock*?. France.

90. TEREBRATULA DIPHYOÏDES. B.M.

Shell smooth, depressed, expanded, triangular, perforated in the middle; valves unequal, the ventral most convex; beak short, with two dorsal ridges; foramen moderate, round. Lon. 22, lat. 25, alt. 11 lines.

Terebratula diphyoides, *D'Orb.* 1847, *Ter. Crét.* iv. p. 87. t. 509; *Prod.* ii. p. 108.
Fossil. *Neocomian.* France.

91. TEREBRATULA? QUADRIPLECTA*. B.M.

Shell pentagonal, with four prominent rounded ribs to each valve; ribs sometimes blending or becoming obsolete; margins strongly sinuated; dorsal valve prominent in the centre, depressed at the sides, with two subcentral and two remote lateral ribs, occasionally a small fifth rib in the mesial furrow, interior furnished with a prominent cardinal process having a dental pit on each side; ventral valve with two distinct or blended subcentral and two lateral ribs; beak small, laterally compressed, curved, truncated by a minute apical foramen; area small, flat, triangular, bounded by prominent beak-ridges; deltidium angular, sunk. Lon. 5, lat. 5, alt. 3½ lines.

Terebratula quadriplecta, *Münst.* 1841, *Beitr. Petref.* iv. p. 58. pl. 6. f. 9, 10.
Terebratula quadricostata, *Braun*, 1841, *Id.* pl. 9. f. 5.
Terebratula contraplecta, *Braun*, 1841, *Id.* pl. 9. f. 2?.
Rhynchonella quadriplecta et contraplecta, *D'Orb.* 1849, *Prod.* i. p. 203 (erroneous).
Spirigera quadricostata, *D'Orb. Id.* p. 204.
Fossil. *Trias.* St. Cassian, Tyrol.

92. TEREBRATULA? TRICOSTATA. B.M.

Shell suborbicular, depressed, trilobed, smooth; dorsal valve with a prominent middle lobe bounded by shallow furrows; ventral valve with a deep central and obscure lateral furrow; beak small, acute; foramen minute. Lon. 3, lat. 3, alt. 1¼ line.

Terebratula tricostata, *Münst.* 1841, *Beitr.* iv. p. 57. pl. 6. f. 7.
Terebratula triplecta, *Klipstein, MS.*
Spirigera tricostata, *D'Orb. Prod.* i. p. 204.
Fossil. *Trias.* Tyrol.

93. TEREBRATULA? BIPARTITA. B.M.

Shell oval, smooth, depressed, with a longitudinal furrow in the centre of each valve; front slightly truncated, sides depressed; beak small, prominent, truncated by a small round foramen. Lon. 7, lat. 5 lines (*Münster*).

* Most of the *Triassic* and *Palæozoic* Terebratulæ were probably furnished with internal *spires*, and belong to the genera *Athyris*, M'Coy, and *Retzia*, King. (Woodward, MS.)

Terebratula bipartita, *Münst.* 1841, *Beitr.* iv. p. 60. pl. 6. f. 11.
Terebratula subbipartita, *D'Orb. Prod.* i. p. 204.
Terebratula Waterhousii, *Klipstein, MS.* (not *Dav.*).
Fossil. *Trias.* Tyrol.

94. TEREBRATULA? BRONNII. B.M.

Shell small, broadly ovate, tumid, depressed at the sides, smooth, with a broad mesial fold, and three obscure lateral folds on each side; margins undulated; beak prominent, rounded, recurved, with indications of an internal median septum. Lon. 4½, lat. 4, alt. 3 lines.

Terebratula Bronnii, *Klipst.* 1845, *Beitr.* p. 215. pl. 15. f. 13.
Terebratula Cassiana, *D'Orb. Prod.* i. p. 204.
Fossil. *Trias.* Tyrol.

95. TEREBRATULA? WISMANNI. B.M.

Shell suborbicular, depressed, smooth; front margins slightly elevated; beak inconspicuous, truncated by a small foramen. Lon. 5, lat. 5, alt. 2½ lines.

Terebratula Wismanni, *Münst.* 1841, *Beitr.* iv. p. 64. pl. 6. f. 18.
D'Orb. Prod. i. p. 204.
Terebratula Buchii, *Klipst.* 1844, *Beitr.* p. 218. pl. 15. f. 2.
Terebratula salinaria, *D'Orb.* 1849, *Prod.* i. p. 204.
Fossil. *Trias.* Tyrol.

96. TEREBRATULA? SUBCURVATA. B.M.

Shell suborbicular, trilobed, smooth; dorsal valve with a prominent mesial ridge and depressed sides; ventral valve with a longitudinal furrow, much depressed in front; beak small, prominent, truncated by a small foramen. Lon. and lat. 3½, alt. 2 lines.

Terebratula subcurvata, *Münst.* 1841, *Beitr.* iv. p. 63. pl. 6. f. 17.
D'Orb. Prod. i. p. 204.
Terebratula Buchii, var., *Klipstein.*
Fossil. *Trias.* Tyrol.

97. TEREBRATULA? MÜNSTERII. B.M.

Shell oval, depressed, smooth, with numerous lines of growth near the margin; dorsal valve slightly trilobed, prominent in the centre, depressed at the sides; beak thick, rounded, recurved, truncated by a rather large foramen. Lon. 10, lat. 9 lines.

Terebratula Münsterii, *D'Orb. Prod.* i. p. 204.
Terebratula vulgaris, *Münst. Beitr.* iv. p. 61. pl. 6. f. 12 (not *Schl.*).

Terebratulites complanatus, *Schl.* 1816, *Denksch. Akad. Münch.* p. 27. t. 7. f. 12–14? (not *Brocchi*).

Fossil. *Trias.* Tyrol.

98. TEREBRATULA? ÆQUALIS. B.M.

Shell orbicular, smooth; valves equally and regularly convex; margins even; beak thick, prominent, rounded, recurved; foramen moderate, round. Lon. 7, lat. 6½, alt. 4 lines.

Terebratula æqualis, *Klipst. Beitr.* 1844, p. 223. pl. 15. f. 7.
D'Orb. Prod. i. p. 204.

Fossil. *Trias.* Tyrol.

99. TEREBRATULA? HEMISPHÆROIDICA. B.M.

Shell suborbicular, depressed, truncated in front, widest near the hinge-line, smooth, with obscure lines of growth near the margin; dorsal valve convex near the umbo, depressed at the sides; margins even; beak small, prominent, truncated by a small foramen; indications of a long internal septum in the ventral valve. Lon. 4, lat. 4½, alt. 2½ lines.

Terebratula hemisphæroidica, *Klipst.* 1844, *Beitr.* p. 222. pl. 15. f. 10.

Fossil. *Trias.* Tyrol.

100. TEREBRATULA? HASTINGSIÆ. B.M.

Shell small, oblong, ventricose, smooth; front margin very slightly elevated; beak small, prominent, recurved, rounded, truncated by a minute foramen. Lon. 4, lat. 3, alt. 2½ lines.

Terebratula Hastingsiæ, *Klipst. MS.*

Fossil. *Trias.* St. Cassian.

101. TEREBRATULA? PENTAGONALIS.

Shell small, oblong, ventricose, smooth; ventral valve slightly sinuated in front; beak small, recurved.

Terebratula pentagonalis, *Klipstein*, 1844, *Beitr.* p. 220. pl. 15. f. 12, enlarged (not *Phil.*=*T. caput-serpentis*!).
Terebratula subpentagonalis, *D'Orb. Prod.* i. p. 204.
Terebratula Hastingsiæ, *Klipst. MS.*?

Fossil. *Trias.* Tyrol.

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102. TEREBRATULA ELONGATA. B.M.

Shell oblong, depressed, smooth, rather contracted and truncated in front; dorsal valve flattened longitudinally, much de-

pressed at the sides; ventral valve with a shallow longitudinal sinus; beak prominent, slightly curved; foramen moderate, complete, round; loop short and simple. Lon. 13, lat. 9, alt. 6 lines.

Terebratulites elongatus, *Schl.* 1816, *Denkschriften Akad. Münch.* vi. p. 27. pl. 7. f. 7–9.
Terebratula elongata, *King, Permian Foss.* p. 147. pl. 6. f. 30–45.
Geinitz, Zech. p. 4. pl. 4. f. 27–36.
Vern. Russ. p. 66. pl. 9. f. 9.
Münst. 1841, *Beitr.* iv. p. 62. pl. 6. f. 14?.
Buch, 1834, *Ueber Terebrateln*, p. 100; 1838, *Mém. Soc. Géol. Fr.* iii. p. 211. pl. 19. f. 10.
Terebratula plica, *Kutorga*, 1842, *Ib.* pl. 5. f. 11.
Terebratula canidea, *Geinitz*, 1846, *Grundriss*, p. 507.
Terebratula subelongata, *D'Orb.* 1847, *Prod.* i. p. 168.
Fossil. *Permian.* Germany; England; Russia.
Devonian. Boulonnais (*Bouchard*).

103. TEREBRATULA QUALENII.

Shell elongated, depressed, widest in the middle, contracted at each end, smooth; dorsal valve with an elevated central ridge, sides depressed; ventral valve sinuated in front; beak prominent, rounded, recurved; foramen small. Lon. 10, lat. 7, alt. 4 lines.

Terebratula Qualenii (*Fisch.*), *Kutorga*, 1842, *Verh. Kaiserl. Petersb.* p. 26. pl. 6. f. 2.
D'Orb. Prod. i. p. 168.
Fossil. *Permian.* Russia.

104. TEREBRATULA SUFFLATA. B.M.

Shell broadly ovate, obtuse or slightly indented in front, depressed, smooth; valves moderately convex; margins even, sinuated in front; ventral valve with a medial sinus; beak short, rounded, recurved; foramen moderate. Lon. 8, lat. 7, alt. 4½ lines.

Terebratula sufflata, *Schl.* 1816, *Akad. Münch.* vi. p. 27. pl. 7. f. 10, 11; *Mem. Acad. Bavière*, 1817, pl. 7. f. 10.
Buch, Mém. Soc. Géol. France, iii. p. 213. pl. 19. f. 12 bis.
Murch. Geol. Russ. i. p. 222.
Münster, Beitr. iv. p. 63. pl. 6. f. 15?.
King, Permian Fossils, p. 149. pl. 7. f. 1–9.
Terebratula inflata, *Schl. Petref.* p. 617.
Buch, Ueber Terebrateln, p. 102.
Terebratula subsufflata, *D'Orb.* 1849, *Prod.* i. p. 204?.
Fossil. *Permian.* Germany; England; Russia.
Trias?. Tyrol.

105. TEREBRATULA SACCULUS. B.M.

Shell oblong, with a straight or emarginate front, which is sometimes elevated, and almost always defined by two broad, obtuse ridges, proceeding a short distance on the shell, on each side of a mesial broad shallow groove; beak prominent, incurved.

Anomites sacculus, *Martin*, 1809, *Petref.* t. 46. f. 1, 2.
Terebratula sacculus, *Koninck, Descr.* p. 293. pl. 20. f. 3.
D'Orb. Prod. i. p. 151.
Fossil. *Carb.* Britain; Belgium; Russia.

106. TEREBRATULA HASTATA. B.M.

Shell elliptical, subrhomboidal, rather depressed; front truncated and indented; edges sharp; beak thick, slightly recurved; foramen small; loop short, simple. Lon. 19, lat. 15, alt. 11 lines.

Terebratula hastata, *Sow.* 1824, *Min. Con.* v. p. 66. t. 446. f. 2, 3.
Phil. Geol. Yorks. ii. pl. 12. f. 1; *Pal. Foss.* p. 91. pl. 35. f. 168?.
Rœmer, Nordd. Ool. p. 48.
Fossil. *Carb.* Britain; Belgium.

107. TEREBRATULA FUSIFORMIS.

Shell smooth, much elongated, fusiform, inflated, contracted at each end; valves equally convex; margins even; beak pointed, recurved; foramen small, apical?; deltidium distinct?. Lon. 10, lat. 5½, alt. 4 lines.

Terebratula fusiformis, *Vern.* 1845, *Russ.* p. 65. pl. 9. f. 8.
D'Orb. Prod. i. p. 151.
Fossil. *Carb.* Russia.

108. TEREBRATULA? LACRYMA.

Shell subglobose, smooth, oblong; front straight, or slightly waved, scarcely raised except at the edge, which is deeply sinuated by the projection of the inferior valve, the central furrow of which is broad, flat, and bounded by two sharpish ridges; beak not prominent. Lon. 5, lat. 4½, alt. 4 lines.

Atrypa lacryma, *Sow. Geol. Trans.* 2nd ser. v. pl. 56. f. 9.
Fossil. *Devonian.* England.

109. TEREBRATULA? JUVENIS. B.M.

"*Shell* broad ovate, depressed, smooth, contracted toward the front; larger valve remarkably incurved at the minute, laterally angulated beak. In full-grown specimens the side margins are

undulated, and the front is rather depressed in the middle." Lon. 7, lat. 7, alt. 4 lines.

Terebratula juvenis, *Sowerby, Geol. Trans.* 2nd ser. v. pl. 56. f. 8.
Phil. 1841, *Pal. Foss.* pl. 35. f. 165.
D'Orb. Prod. i. p. 100.

Fossil. *Devonian.* Britain.

110. TEREBRATULA VIRGO,

Shell ovato-lanceolate, uniformly convex; beak prominent; front margin contracted, nearly straight; surface beautifully reticulated, and marked by a few faint, longitudinal striæ. Lon. 8, lat. 5½ lines.

Terebratula virgo, *Phil. Pal. Foss.* p. 91. pl. 35. f. 167.

Fossil. *Devonian.* England.

111. TEREBRATULA CAÏQUA.

Shell much elongated, elliptical; valves equally ventricose, smooth, or with a few striæ of growth; beak inflated, much recurved, and touching the other valve; foramen round, moderate; deltidium concealed; front straight. Lon. $2\frac{5}{12}$, lat. $1\frac{7}{12}$, alt. $1\frac{5}{12}$ unc.

Terebratula caïqua, *Vern. & Arch.* 1842, *Trans. Geol. Soc.* 2nd ser. vi. pl. 35. f. 1.
D'Orb. Prod. i. p. 100.

Terebratula amygdalina, *Goldf. Bonn. Mus.*

Fossil. *Devonian.* Paffrath, Prussia.

112. TEREBRATULA BORDINI.

Shell subpentagonal, smooth, very finely punctate; edges sharp; margins even; ventral valve rather more convex than the dorsal; beak recurved, its summit perforated by a small round foramen; deltidium distinct. Lon. 10, lat. 9, alt. 4 lines.

Terebratula Bordini, *Vern.* 1850, *Bull. Soc. Géol. Fr.* t. 7. p. 36. pl. 1. f. 8.

Fossil. *Devonian.* Spain.

113. TEREBRATULA SCHULZII.

Shell much elongated, smooth; borders sharp; front margins quite even; ventral valve most convex; beak acute, perforated by a small foramen, below which is an elongated deltidium. Lon. 9, lat. 5, alt. 3 lines.

Terebratula Schulzii, *Vern.* 1850, *Bull. Soc. Géol. Fr.* vii. p. 37. pl. 1. f. 7.

Fossil. *Devonian.* Spain.

114. TEREBRATULA ARCHIACI.

Shell subcircular, depressed, smooth; edges sharp; margins even; ventral valve rather more convex than dorsal; beak slightly curved; foramen apical, minute; deltidium triangular; interior of dorsal valve with a cardinal process, dental pits, and elongated adductor impressions. Lon. 26, lat. 25, alt. 9½ lines.

Terebratula Archiaci, *Verneuil*, 1850, *Bull. Soc. Géol. Fr.* t. vii. p. 40. pl. 2. f. 2.

Fossil. *Devonian.* Asturias.

115. TEREBRATULA HAIMEANA.

Shell circular, depressed, smooth, with obscure lines of growth; valves nearly equally convex; margins even; beak obtuse, laterally keeled, recurved, truncated by a small round foramen; deltidium nearly concealed, solid. Lon. 28, lat. 30, alt. 16 lines.

Terebratula Haimeana, *Dav.* April 1852, *Ann. Nat. Hist.* pl. 14. f. 1.

Fossil. *Devonian.* Prussia.

2. TEREBRATULINA.

Shell finely striated; valve auriculate; beak straight; deltidium usually rudimentary; foramen incomplete; loop short, rendered annular by the union of the oral processes (fig. 4).

Terebratulæ striatæ, *Morris*, 1846, *Journ. Geol. Soc.* p. 385.

Terebratulina (caput-serpentis), *D'Orb.* 1848, *Ann. Sc. Nat.* viii. 67. *Dav.* 1852, *Ann. Nat. Hist.* p. 365; *Mon. Cret.* p. 34.

Terebratulæ annuliferæ, *Quenstedt*, 1851, *Handbuch*, p. 462.

Terebratulina caput-serpentis.

Fig. 4.

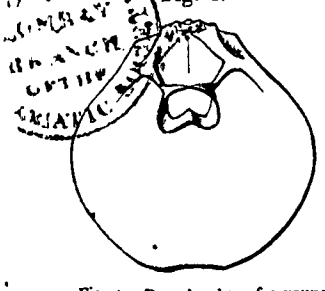


Fig. 5.

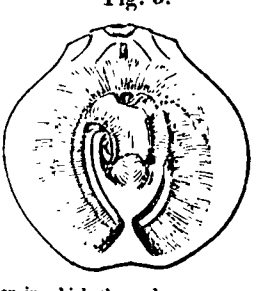


Fig. 4.—Dorsal valve of a young specimen in which the oral processes are not yet completely developed.

Fig. 5.—Shell with the animal; the intestine is seen projecting above the oral aperture and fringe. The œsophagus passes through the annular part of the loop.

1. TEREBRATULINA CAPUT-SERPENTIS. B.M.

Shell ovate, subpentagonal, tapering at the beak, slightly truncated in front, whitish, ornamented with fine, bifurcating, granulated ribs; beak nearly straight; foramen rather large, incomplete, oblique; deltidia rudimentary, disunited; valves eared; loop short, one-third the length of the shell, not reflected, oral processes united. Lon. 12, lat. 10 lines.

Anomia caput-serpentis, *Linn.* 1767, *Syst. Nat.* ed. 12. 1153.
Born, Mus. 119. t. 6. f. 13.
Chemnitz, viii. 103. t. 78. f. 712; xi. 248. t. 203. f. 2013, 2014.
Gmelin, S. N. 3344.
Dillw. Index Test. pl. 2. f. 22.
Poli, Test. Sicil. ii. 192. t. 30. f. 15 *y*.
Philippi, Moll. Sicil. i. 94. t. 6. f. 5; ii. 66.
Terebratulina Caput serpentis, *D'Orb. Ann. Sci. Nat.* 1848, viii. 67. t. 7. f. 7, 8, 17.
Terebratulina cornea, *D'Orb.* 1848, *Ann. Sci. Nat.* viii. t. 7. f. 9, 10.
Anomia pubescens, *L. Syst. Nat.* 1152; *Gmelin, S. N.* 3344.
Dillw. R. S. 293.
Schröter, Einl. Conch. iii. p. 397. pl. 9. f. 10.
Terebratula pubescens, *Retz. N. Gen.* 15?
Müller, Z. Dan. Prod. 249. no. 3007.
Terebratula, *Lamk. E. M.* t. 241. f. 2; "t. 246. f. 7, opt." *Lamk.*
Gründler, 1774, *Naturforscher,* p. 84. t. 111, animal.
Anomia retusa, *L. Syst. N.* 12. p. 1151; *Fauna Suecica,* ed. 2. p. 521.
Dillw. Recent Shells, i. p. 292.
Terebratula caput-serpentis, *Lamk. Hist.* vi. 247; *ed. Desh.* vii. 332.
Sow. Gen. f. 2; *Thes. Conch.* vii. 343. t. 68. f. 1–4; t. 72. f. 116.
Kuster, Conch. C. vii. 22. t. 1. f. 15, 16; t. 2. f. 16, 17.
Blainv. D. S. N. liii. 139.
Phil. Moll. Sicil. i. p. 94. pl. 6. f. 4, 5.
Forbes & Hanley, Brit. Moll. pl. 56. f. 1–4.
Delthyris spatula, *Menke, Syn.* ed. 2. 96.
Anomia aurita, *Linn. S. N.* 1151? *Gmelin,* 3342.
Terebratula aurita, *Fleming, Phil. Zool.* ii. p. 498. pl. 4. f. 5; *Brit. An.* p. 369.
Terebratula costata, *Lowe, Zool. Journ.* ii. 105. t. 5. f. 8, 9.
Desh. in Lamk. Hist. ed. 2. vii. 351.
Terebratula striata, *Leach, Brit. Moll.* t. 13. f. 1, 2.

Terebratula Gervillii, *S. Wood, May. Nat. Hist.* v. p. 253.
Hab. N. Britain; Norway; Mediterranean. At 10-50 fathoms.
Fossil. *Miocene.* Gibraltar (Jas. Smith, F.R.S.); Turin.
Pliocene. Suffolk (S. V. Wood).

2. TEREBRATULINA SEPTENTRIONALIS.

Shell ovate, whitish, radiately costellated with very slender, bifurcating, roughish ribs; beak obtuse; foramen large, incomplete; deltidia rudimentary; loop two-fifths the length of the shell, anelliform. Lon. 9, lat. 7, alt. lines.

Terebratula septentrionalis, *Couthouy.*
G. B. Sowerby, Thes. Conch. vii. 344. t. 57, f. 5, 6.
Hab. Massachusetts.

3. TEREBRATULINA JAPONICA.

Shell oblong, thin, whitish, radiately striated; striæ numerous, bifurcating; sides rather flattened near the hinge; beak truncated by a moderate, incomplete, very oblique foramen; deltidium obsolete; loop small, anelliform. Lon. 13, lat. 9 lines.

Terebratula Japonica, *G. B. Sowerby, Thes. Conch.* vii. 344. t. 68. f. 7, 8.
Adams & Reeve, Zool. Samarang, p. 71. pl. 21. f. 1?
Hab. Japan. (Mus. Cuming.)

4. TEREBRATULINA ANGUSTA.

Shell elongate-oval, slightly compressed, pellucid white, closely and very finely costellated longitudinally; ribs rough; beak truncated; valves nearly equal, slightly furrowed in the middle; front margin a little sinuated. Lon. 11, lat. 7 lines.

Terebratula angusta, *Adams & Reeve,* 1850, *Zool. Samarang.* p. 71. pl. 21. f. 2.
Terebratulina caput-serpentis, var.?
Hab. Seas of Japan.

5. TEREBRATULINA CANCELLATA.

Shell ovate-oblong, ventricose, brownish; striæ very slender, close-set, decussated by fine lines of growth; dorsal valve rather flat; ventral valve convex; foramen large, complete; deltidia large, united; loop short. Lon. 10, lat. 7, alt. 5 lines.

Terebratula cancellata, *Koch.*
Kuster, Conch. C. vii. t. 2 *b.* f. 11, 12, 13.
Sow. Thes. Conch. vii. 358. t. 71. f. 93.
Hab. ——? (Mus. Cuming.)

6. TEREBRATULINA ABYSSICOLA.

Shell oval-elongated, tapering to the beak and a little truncated in front, pale flesh-colour, radiated with obscure, bifurcating striæ; beak produced; foramen moderate, entire; dorsal valve with a slight central depression. Lon. 8, lat. 7 lines.

Terebratula abyssicola, *Adams & Reeve*, 1850, *Zool. Samarang*, p. 72. pl. 21. f. 5.
Terebratulina abyssicola, *Dav.* May 1852, *Ann. Nat. Hist.* p. 366.
Hab. Cape of Good Hope; at 120 fathoms.

7. TEREBRATULINA CUMINGII.

Shell minute, somewhat pentagonal, gibbous, yellowish white, ornamented with very numerous, minute, elevated, radiating and intercalating striæ; valves with very small ears; beak small, obliquely truncated by a round, incomplete foramen; deltidia separate; margins slightly sinuated in front; loop anelliform. Lon. 3¼, lat. 3, alt. 2 lines.

Terebratulina Cumingii, *Dav.* May 1852, *Ann. Nat. Hist.* p. 366; *Proc. Zool. Soc.* p. . pl. . f. 17–19.
Hab. Chinese Seas. (Mus. Cuming.)

8. TEREBRATULINA STRIATULA. B.M.

Shell oval, slightly produced at the beak, depressed, minutely striated; striæ unequal, bifurcating and intercalating, 80–90 at the margin; margin slightly flexuous; beak truncated by a moderate, incomplete foramen; deltidia small; auricles indistinct. Lon. 10, lat. 8, alt. 4 lines.

Terebratula striatula, *Sow.* 1829 (in part., not *T. striatula*, Mant.), *Min. Con.* vi. p. 69. t. 536. f. 5 (not 3, 4).
Terebratulina striatula, *Dav. Mon. Tertiary Brach.* p. 14. pl. 1. f. 16.
Fossil. *Eocene.* England.

9. TEREBRATULINA TENUISTRIATA.

Shell small, oval, depressed, ornamented with radiating, granulated striæ; beak prominent, acute; foramen small, entire; deltidium double, complete. Lon. 5, lat. 4, alt. 2 lines.

Terebratula tenuistriata, *Leym.* 1846, *Mém. Soc. Géol. France*, i. p. 363. pl. 15. f. 11.
D'Arch. Mém. Soc. Géol. France, 2nd ser. t. ii. p. 214. pl. 7. f. 14.
Terebratula Defrancii, *Leym. id.* pl. 15. f. 12 (not *Bronyn.*).
Fossil. *Eocene.* France.

10. TEREBRATULINA LACRYMA.

Shell tear-shaped; valves convex, marked with delicate longitudinal striæ; beak elongated; foramen large. Lon. 6, lat. 4 lines.

Terebratula lacryma, *Morton*, 1834, *Syn. Cret. group*, p. 72. pl. 16. f. 6.
D'Orb. Prod. ii. p. 396.

Fossil. *Eocene.* Alabama, U.S.

11. TEREBRATULINA ? VENEI.

Shell oval, gibbous, ornamented with concentric lines of growth and radiately striated; striæ not numerous, regular, seldom bifurcating; valves nearly equally convex; beak prominent, curved; foramen small, round; deltidium conspicuous, double. Lon. 6¼, lat. 4½, alt. 3½ lines.

Terebratula Venei, *Leym.* 1846, *Mém. Soc. Géol. France*, t. 1. p. 362. pl. 15. f. 10.

Fossil. *Eocene.* France.

12. TEREBRATULINA MULTISTRIATA.

Shell ovate, subpentagonal, depressed; ornamented with radiating striæ crossed by numerous lines of growth; margins even, slightly arched in front; dorsal valve rather flat, depressed at the sides; ventral valve convex; beak large and thick, recurved, truncated by a large round foramen; deltidium triangular, solid. Lon. 26, lat. 20, alt. 12 lines.

Terebratula multistriata, *Dunker*, 1847, *Beitr.* p. 128. t. 18. f. 1–3.

Fossil. *Tertiary.* Ravensberg.

13. TEREBRATULINA STRIATA. B.M.

Shell tear-shaped, slender, slightly truncated or notched in front, ornamented with bifurcating, granulated striæ; beak short and tapering, ears distinct, foramen moderate, deltidia disunited. Lon. 11, lat. 8, alt. 4½ lines (Brit. sp.).

Anomites striata, *Wahl.* 1821, *Petr. Suec. Nov. Act. R. S. Upsal.* viii. p. 61 (not of *Brocchi*, 1814).
Terebratulina striata, *D'Orb. Ter. Crét.* iv. p. 65. pl. 504. f. 9–17.
Dav. Mon. Cret. p. 35. pl. 2. f. 18–28.
Terebratula striatula, *Mantell*, 1822, *Geol. Suss.* pl. 25. f. 7, 8, 12.
Phil. Geol. Yorks. i. pl. 2. f. 28.
Sow. Min. Con. vi. p. 69. pl. 336. f. 3, 4.
Buch, Mém. Soc. Géol. France, 1 ser. iii. p. 164. pl. 16. f. 8.

Desh. Lam. ed. 2. vii. p. 360.
Geinitz, Petr. Kreid. pl. 16. f. 12.
D'Orb. in Murch. Russia, ii. p. 463. pl. 43. f. 18–20.
Reuss, Bohem. Kreid. p. 49. pl. 26. f. 2.
Dixon, Geol. Sussex, pl. 27. f. 21.
Rœmer, Kreid. p. 40.

Terebratula Defrancii, *Brongn.* 1822, *Env. Paris,* p. 383. pl. 3. f. 6.
Nilsson, Petr. Suec. p. 35. pl. 4. f. 7.
Buch, Mém. Soc. Géol. France, p. 165. pl. 16. f. 8.
Hisinger, Leth. Suec. p. 78. t. 22. f. 10.
Rœmer, Nord. Kreid. p. 40.
Dalman, Vet. Acad. 1848, p. 136.

Terebratula scabra, *Fischer,* 1830–7, *Oryct. Moscow & Foss. Gouv. Mosc.* 1809, pl. 2. f. 1, 2 (indeterminable).

Terebratula pentagonalis, *Phil.* 1825, *Geol. Yorks.* i. pl. 1. f. 17 (founded on a specimen partly imbedded in chalk).

Young—

Terebratula chrysalis, *Schlotheim,* 1813, *in Leonhard's Min. Tasch.* vol. vii. (*ref. to Faujas, Mt. S. Pierre, Maestricht,* pl. 26. f. 7, 9.)
Schl. Petref. 1820, p. 39.
Buch, Mém. Soc. Géol. France, pl. 16. f. 9.
Bronn, Leth. Geog. p. 651. pl. 30. f. 6.
Reuss, Bohem. Kreid. p. 49. pl. 26. f. 3.
Dav. Lond. Geol. Journ. i. pl. 18. f. 18–20.
Dunker, Palæont. p. 56.
Rœmer, Kreid. p. 40.

Terebratula tenuissima, *Schl.* 1813, *Leonh. Min. Tasch.* vii.

Terebratula Gervillii, *Defrance,* 1828, *Dict. Sc. Nat.* liii. p. 157.
Woodward, Geol. Norf. t. 6. f. 14.

Terebratula Faujasii, *Rœmer, Kreid.* p. 40. t. 7. f. 8.
Reuss, Kreid. p. 50. pl. 26. f. 4.

Terebratula auriculata, *Rœmer, Kreid.* p. 39. t. 7. f. 9.
D'Orb. Prod. ii. p. 173.

Terebratulina microscopica, *Alth,* 1849, *in Haid. Abhandl.* 1850, p. 257. t. 13. f. 7.

Fossil. *Chalk, Upper Greensand, Speeton Clay.* England; France; Belgium; Germany; Russia.

14. TEREBRATULINA GISII.

Shell minute, trigonal, rounded in front, with 11–15 simple rounded and granulated ribs; dorsal valve with large ears. Lon. 1½ to 3 lines.

Terebratula Gisii, *Hag.* 1842, *Neues Jahrbuch*, p. 537.
Rœmer, *Kreid.* p. 40.
Bronn, *Index*, p. 1237.

Fossil. *Chalk.* Rügen.

15. TEREBRATULINA ELEGANS.

Shell orbicular, depressed, radiately ribbed; ribs curved, dichotomous, strongly granulated; beak prominent; ears conspicuous. Lon. 2½ lines.

Terebratulina Dutempleana, *D'Orb.* 1847, *Paléont.* iv. p. 14. pl. 504. f. 1–8.
Terebratulina elegans, *D'Orb.* 1850, *Prod.* ii. p. 258.
Terebratulina striata, *Wahl.* (young?)

Fossil. *Chalk.* France.

16. TEREBRATULINA GUADALUPÆ.

Shell small, ovate-orbicular, inflated, radiately striated; striæ fine, smooth, close, bifurcated; dorsal valve orbicular, convex, eared; ventral valve more convex; beak prominent, rather recurved; foramen large, complete. Lon. 4, lat. 3½, alt. 2½ lines.

Terebratula Guadalupæ, *Rœmer*, 1852, *Kreid. Texas*, p. 82. t. 6. f. 3.

Fossil. *Chalk.* Guadaloupe.

17. TEREBRATULINA CAMPANIENSIS.

Shell ovate-oblong, depressed, triangular, radiately ribbed; ribs granulated, entire, with smaller ribs disposed in their interspaces; beak angular; front nearly straight; ears short. Lon. 5 lines.

Terebratulina Campaniensis, *D'Orb.* 1847, *Ter. Crét.* iv. p. 60. t. 502. f. 13.
Terebratulina striata, *Wahl.* var.?

Fossil. *Chalk-marl.* Belgium; France.

18. TEREBRATULINA MARTINIANA.

Shell ovate, triangular, depressed, radiately ribbed; ribs blunt, simple, disposed in fasciculi; beak angular; front obtusely truncated; ears very small. Lon. 6½ lines.

Terebratulina Martiniana, *D'Orb.* 1847, *Ter. Crét.* iv. p. 59. t. 502. f. 8, 12; *Prod.* ii. p. 140.
Terebratulina striata, *Wahl.* var.?

Fossil. *Gault.* France.

19. TEREBRATULINA BIAURICULATA.

Shell angularly ovate, depressed, radiately ribbed; ribs elevated, angular, irregularly fasciculated; beak tapering; front truncated; ears short. Lon. 4 lines.

Terebratulina auriculata, *D'Orb.* 1847, *Ter. Crét.* iv. p. 58. pl. 502. f. 3–7 (not *Rœmer*).
Terebratulina biauriculata, *D'Orb. Prod.* ii. p. 85.
Terebratulina striata, *Wahl.* var.?
Fossil. *Neocomian.* France.

20. TEREBRATULINA FLORIDANA.

Shell subpentagonal, with obscure radiating striæ; valves slightly biplicated; beak produced, straight; foramen small. Lon. 7½, lat. 6½ lines.

Terebratula Floridana, *Morton*, 1834, *Syn. Cret.* p. 72. pl. 16. f. 7.
Terebratulina Floridana, *D'Orb. Prod.* ii. p. 258.
Fossil. *Chalk.* Alabama, U.S.

21. TEREBRATULINA GRACILIS.

Shell orbicular, striated; dorsal valve flat or concave; ventral valve convex; beak small, recurved; foramen small; deltidium rudimentary; ears small; striæ fine, very variable in number (18–50), granulated, augmenting in number by the intercalation of smaller ribs towards the margin. Lon. 5¼, lat. 5, alt. 2 lines.

Terebratulites gracilis, *Schl.* 1813, *Leonh. Min. Tasch.* vii. p. 112. t. 3. f. 3; *Petref.* p. 270. no. 35, 1820.
Terebratula gracilis, *Schl.* 1832, *Petref.*
Buch, Mém. Soc. Géol. France, 1st ser. iii. p. 167. pl. 16. f. 11.
Geinitz, Petref. Kreid. pl. 16. f. 13; *Grundriss Verst.* pl. 21. f. 10.
Reuss, Bohem. Kreid. p. 49. pl. 26. f. 1, pl. 42. f. 24.
Puggaard, Bull. Soc. Géol. France, vii. p. 534.
Quenst. Handb. p. 462. t. 37. f. 8, 9.
Terebratulina gracilis, *D'Orb. in Murch. Russia*, ii. p. 499. pl. 43. f. 24–26; *Ter. Crét.* iv. p. 61. t. 503. f. 1–6.
Dav. Mon. Cret. p. 38. pl. 2. f. 13–16.
Terebratula ornata, *Rœmer*, 1840, *Nord. Kreid.* p. 40. no. 26 pl. 7. f. 10.
Terebratulina ornata, *D'Orb. Prod.* ii. p. 258.
Terebratula rigida, *Sowerby*, 1829, *Min. Con.* vi. p. 69. pl. 536. f. 2.
Dav. Mon. Cret. pl. 2. f. 17.
Fossil. *Chalk.* England; Belgium; France; Germany; Russia.

22. TEREBRATULINA? BOURGEOISII.

Shell minute, orbicular, depressed, radiately striated; striæ smooth, curved, diverging towards the sides; ventral valve con-

vex; dorsal valve flat; beak small; foramen minute; loop — ? Lon. 4, lat. 4 lines.

Terebratella Bourgeoisii, *D'Orb.* 1847, *Ter. Crét.* iv. p. 124. t. 518. f. 10–16.

Terebratulina gracilis, *Schl.* var.?

Fossil. *Chalk.* France.

23. TEREBRATULINA? ECHINULATA.

Shell ovate-oblong, depressed, closely radiately striated; striæ slightly prickly; margins bisinuated in front; foramen round, complete; deltidium solid, concave. Lon. 18, lat. 13, alt. 9 lines.

Terebratula echinulata, *Dujardin*, 1836, *Mém. Soc. Géol. France*, ii. p. 223. f. 222.

Terebratulina echinulata, *D'Orb. Ter. Crét.* iv. 63. t. 503. f. 7–11.

Fossil. *Chalk.* France.

24. TEREBRATULINA SANTONENSIS.

Shell oval, depressed, radiately ribbed; ribs granulose, curved, diverging towards the sides; ventral valve convex; area very small; foramen small; dorsal valve nearly flat. Lon. 9 lines.

Terebratula Santonensis, *D'Arch.* 1837, *Mém. Soc. Géol. France*, ii. p. 181. pl. 13. f. 14.

Terebratella Santonensis, *D'Orb.* 1847, *Ter. Crét.* iv. p. 123. t. 518. f. 5–9.

Fossil. *Chalk.* France.

25. TEREBRATULINA PARRACENA.

Shell rounded; not truncated in front.

Terebratulina parracena, (*Talavignes*) *D'Orb. Prod.* ii. p. 308.

Fossil. *U. Chalk.* France.

26. TEREBRATULINA MEGATREMA. Bristol Mus.

Shell "moderately convex, transversely obovate, with a few distinct ribs; the beak is large and produced, with a very large perforation." Lon. 3, lat. 3 lines.

Terebratula megatrema, *J. Sow.* 1836, *Geol. Trans.* iv. p. 242 & 343. pl. 18. f. 3.

D'Orb. Prod. ii. p. 172.

Fossil. *U. Greensand.* England.

27. TEREBRATULINA SUBSTRIATA. B.M.

Shell oval or subpentagonal, radiately striated; striæ unequal, very fine, dichotomous, crossed by frequent lines of growth;

front slightly elevated; sides depressed; beak short, tapering; foramen large, incomplete; deltidia large, separate; loop small, annular. Lon. 10, lat. 10, alt. 4 lines.

Terebratula substriata, *Schl.* 1820, *Petr.* p. 283.
Buch, Ter. 60.
D'Orb. Prod. i. p. 377:
Quenst. Handb. p. 461. t. 37. f. 6, 7.
Terebratula striatula, *Zieten*, 1830, *Würt.* p. 59. pl. 44. f. 2 (not *Mantell*).
Terebratulinæ substriata, *Davidson, Ann. Nat. Hist.*
Fossil. *Oxford Clay.* France; Germany.

3. WALDHEIMIA.

Shell: foramen complete; loop elongated and reflected; median septum of the smaller valve elongated.

Waldheimia (australis), *King*, 1849, *Permian Fossils*, p. 81.
Terebratulæ with long loops, *Dav.* 1852, *Ann. Nat. Hist.* p. 364.
Terebratulæ cinctæ et carinatæ (part.), *Buch.*

The extent of the septum may be readily ascertained in fossil species by a little acid, without injuring the specimens.

The sections into which *Waldheimia* has been grouped depend entirely upon modifications of external form.

Waldheimia flavescens.

Fig. 6. Fig. 7.

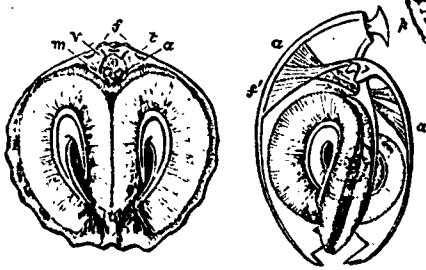


Fig. 6.—Interior of dorsal valve with the animal.
Fig. 7.—Section of both valves with the animal; the muscles of the peduncle are not represented.
a, *a'*. adductor muscle; *f*. retractor muscle; *p*. peduncle; *f*. cardinal process; *t*. dental sockets; *m*. mouth; *v*. position of intestine.

a. Beak round; valves convex, smooth, or slightly plaited.

1. WALDHEIMIA FLAVESCENS. B.M.

Shell oval, rather produced at the beak, gibbous, smooth when young, border of the adult more or less strongly furrowed with unequal, radiating folds; front slightly truncated; colour yellowish, or horny brown; beak short and thick, not much recurved; foramen rather large, complete; deltidium large; loop elongated, reflected; margins at first even, afterwards more or less dentated. Lon. 17, lat. 14, alt. 8 lines.

Terebratula flavescens, *Lamk. Hist.* 1819, ed. 2. vii. 330.
Terebratula australis, *Quoy & Gaim.* 1834, *Voy. Astrol.* v. 551. t. 85. f. 1–5.
Sow. Thes. Conch. vii. 349. t. 69. f. 25–33.
Woodward, Manual, p. 8. f. 4, 5.
Terebratula dentata, *Lamk. Hist.* ed. 2. vii. 331.
Delessert, Icon. t. 18. f. 4.
Var. Terebratula recurva, *Quoy & Gaim.* 1834, *Voy. Astrol.* v. 552.
Sow. Thes. Conch. vii. 350. t. 69. f. 34, 35, 36.
Hab. Australia, Sydney, just below low-water-mark.

2. WALDHEIMIA LENTICULARIS. B.M.

Shell orbicular, smooth, red; margins even; beak small, recurved; foramen small; deltidium conspicuous; loop elongated, reflected. Lon. 24, lat. 22, alt. 14 lines.

Terebratula lenticularis, *Deshayes, Mag. Zool.* 1841, t. 41.
G. B. Sow. Thes. Conch. vii. 360. t. 72. f. 108, 109, 110.
Dav. Ann. Nat. Hist. May 1852, p. 365.
Hab. New Zealand, Strait of Fauveau, at 15 fathoms.
Fossil. In a modern deposit of New Zealand.

3. WALDHEIMIA CRANIUM. B.M.

Shell ovate, front margin sometimes a little truncated, smooth, pale, translucent; beak reflected; foramen large, incomplete; deltidian plates narrow, widely separated; loop reflected, two-thirds as long as the shell. Lon. 24, lat. 19·5, alt. 14 mil.

Petiver, Gaz. t. 93. f. 19.
Anomia cranium, *Gmelin, S. N.* 3247.
Dillw. R. S. i. 294.
Anomia obsoleta, *Solander, MSS.*
Anomia vitrea, *Chemnitz*, viii. 97. t. 78. f. 707–709.
Terebratula cranium, *Müller, Zool. Dan. Prod.* 247.
Sow. Thes. Conch. vii. 354. t. 70. f. 60, 61, 62.
Lovèn, Moll. Scand. p. 29.
Hab. Norway; Finmark; eastward of Bressay, Zetland, in deep water.

4. WALDHEIMIA SEPTIGERA.

Shell white, thin, subpellucid, tumid, smooth, ovate-triangular, truncated in front, and slightly biplicate; foramen large, round; deltidium entire; loop reflected, rather long (three-quarters as long as the shell); smaller valve with a raised median septum. Lon. 28, lat. 21·5, alt. 17 mill.

Terebratula septigera, *Lovèn*, 1846, *Index Moll. Scand.* p. 29.
Hab. Norway; Finmark.

5. WALDHEIMIA GLOBOSA.

Shell ovate, ventricose, smooth, whitish; margins even, slightly sinuated in front; beak thick, slightly reflected, truncated; foramen large, nearly complete; deltidia large, disunited; dorsal valve with a broad, indistinct mesial ridge; loop reflected, two-thirds the length of the shell (*Sowerby*). Lon. 20, lat. 16, alt. 11 lines.

Terebratula globosa, *Lamk. Hist.* 1819, ed. 2. vii. 330.
Blainv. Man. Malac. t. 52. f. 2.
Sow. Thes. Conch. vii. 359. t. 71. f. 99, 100, 101.
Terebratula, *Lamk. E. M.* t. 239. f. 2.
Hab. ——? (Mus. Cuming.)

6. WALDHEIMIA PICTA. B.M.

Shell ovate, rather narrowed in front and at the beak, smooth, thin, orange-red, ornamented with irregular pale rays; margins even; beak recurved; foramen small, entire; deltidia narrow, united; loop elongated, recurved. Lon. 12, lat. 10, alt.? lines.

Anomia picta, *Chemnitz, Conch. C.* xi. 247. t. 203. f. 2011, 2012.
Anomia cranium, var., *Dillw. R. S.* 295.
Terebratula picta, *Sow. Thes. Conch.* vii. 351. t. 70. f. 43, 44.
Var. Terebratula rubella, *G. B. Sow. Thes. Conch.* vii. 350. t. 69. f. 40–42.
Hab. Java.

7. WALDHEIMIA DILATATA. B.M.

Shell suborbicular, gibbous, horny; margins even; beak thick, rather tapering, with obtuse lateral ridges; foramen large, incomplete; deltidia large, separate; loop elongated, reflected. Lon. 19, lat. 18, alt.? lines.

Terebratula dilatata, *Lamk. Hist.* ed. 2. vii. 330.
Sow. Thes. Conch. vii. 352. t. 70. f. 48, 49.
Blainv. D. S. N. liii. 135. 1828.
Terebratula Gaudichaudi, *Blainv. D. S. N.* liii. 136, 1828.
Hab. Straits of Magellan.

8. WALDHEIMIA CALIFORNICA. B.M.

Shell suborbicular, slightly tapering to the beak, gibbous, smooth, brown; margins obscurely sinuated in front; beak recurved; foramen minute, entire; deltidium triangular; loop elongated, reflected. Lon. 25, lat. 23, alt. ? lines.

Terebratula Californica (*Koch*), *Kuster, Nov. Ed. Martini*, viii. pl. 2 *b*. f. 21–23.
G. B. Sow. Thes. Conch. vii. 352. t. 70. f. 50, 51, 52.
Dav. Ann. Nat. Hist. May 1852, p. 364.
Hab. California.

9. WALDHEIMIA PATAGONICA. B.M.

Shell oval, smooth; valves nearly equally convex; beak of ventral valve produced, slightly curved, thick, laterally keeled, truncated by a large foramen; deltidium large and solid; loop elongated and reflected. Lon. 16, lat. 13, alt. 9 lines.

Terebratula Patagonica, *Sow.* 1846, *in Darwin's S. America*, p. 252. pl. 2. f. 26, 27.
D'Orb. Prod. iii. p. 134.
Fossil. *Miocene.* Patagonia.

b. Beak laterally keeled; valves convex, with corresponding ribs or prominences.

Terebratulæ cinctæ, *Buch.*
Quenstedt (part.), *Handb.* p. 465.

10. WALDHEIMIA ACULEATA. B.M.

Shell pentagonal, with four corresponding ridges to each valve; ridges very prominent, narrow, radiating from the umbones and produced beyond the margins of the valves; interspaces ornamented with very fine radiating striæ; margins even, or slightly arched in front; beak truncated by a large round foramen; deltidium usually incomplete; loop elongated, reflected; septum very short. Lon. 16, lat. 15, alt. 9 lines.

Terebratula aculeata, *Catullo*, 1827, *Zool.* 119. t. 1. f. B.
Zieten, Verst. Würt. 1830, p. 58. t. 43. f. 3.
Terebratula Hœninghausii, *Defr.* 1828, *Dict. Sc. Nat.* liii. 152.
Terebratula trigonella, *Buch, Ter.* 83. t. 1. f. 8 (not *Schlotheim*).
Quenst. Handb. p. 465. t. 37. f. 29, 30.
Terebratula Fleuriausa, *D'Orb.* 1850, *Prod.* ii. p. 25.
Fossil. *Coral Rag.* Germany; France.

11. WALDHEIMIA MULTICOSTATA. B.M.

Shell suborbicular, ornamented with 6–11 corresponding ribs; ribs radiating, prominent, rounded, projecting beyond the margin, five or six extending to the umbo, the rest intercalated; valves convex, margins straight; beak short, scarcely curved, truncated by a moderate-sized foramen. Lon. 6, lat. 6, alt. 4 lines.

Terebratula multicostata, *Klipst.* 1844, *Beitr.* p. 216. pl. 15. f. 5. *D'Orb. Prod.* i. p. 204.

Fossil. *Trias.* Tyrol.

12. WALDHEIMIA? QUINQUECOSTATA. B.M.

Shell trigonal, ornamented with five radiating, corresponding ribs; ribs very prominent, rounded, projecting beyond the margin; interspaces narrow, flat; beak small, prominent, laterally compressed. Lon. 3, lat. 2½ lines (*Münster*).

Terebratula quinquecostata, *Münst.* 1841, *Beitr.* iv. p. 59. pl. 6. f. 6.

Spirigera quinquecostata et crista-galli, *D'Orb. Prod.* i. p. 204.

Terebratula crista-galli, *Klipstein*, 1844, *Beitr.* p. 217. pl. 15. f. 9. (Dorsal valve only: lon. 3½, lat. 4½ lines.)

Fossil. *Trias.* St. Cassian.

13. WALDHEIMIA? FLEXUOSA. B.M.

Shell obovate, depressed, smooth at the umbones, bordered with numerous, unequal, corresponding ribs, those at the sides diverging and projecting beyond the margin; front obtuse or slightly truncated; beak prominent, laterally compressed; area small; foramen round, apical. Lon. 5½, lat. 4½, alt. 3 lines.

Terebratula flexuosa, *Münst.* 1841, *Beitr.* iv. p. 59. pl. 6. f. 8. *Klipstein*, t. 15. f. 4.

Rhynchonella flexuosa, *D'Orb. Prod.* i. p. 203.

Fossil. *Trias.* St. Cassian, Tyrol.

14. WALDHEIMIA CELTICA. B.M.

Shell oblong, elongated, smooth, slightly truncated in front; margins even; dorsal valve inflated near the umbo, depressed in front; ventral valve convex; beak slightly produced, not much recurved, keeled; foramen moderate; deltidium obtusely triangular, double; loop elongated, reflected. Lon. 18, lat. 9, alt. 8 lines.

Terebratula longa, *Rœmer**, 1836, *Verst. Nordd. Ool.* p. 50. pl. 2. f. 11; *Kreid.* p. 44 (not *Rœmer, Ool.* 1839).
Morris & Davidson, 1847, *Ann. Nat. Hist.* xx. p. 255. pl. 19. f. 1 (not *Zieten*).
Terebratula celtica, *Morris, Cat.* 2nd ed.
Fossil. *Lower Greensand.* Kent; I. of Wight.
Hilsthon. Germany.

15. WALDHEIMIA? CYMBULA. B.M.

Shell elongated, cylindrical, smooth, ornamented with very numerous imbricating lines of growth; margins even, sinuous; dorsal valve much deflected in front; ventral valve deeply sinuated in front; beak thick, scarcely curved; foramen large; deltidium triangular. Lon. 14, lat. 8, alt. 9 lines.

Terebratula cymbula, *Pusch*, 1837, *Polens Pal.* p. 25. t. 4. f. 11.
Terebratula longa, *Rœmer*, 1839, *Nordd. Ool.* ii. p. 22. t. 18. f. 12 (not *Zieten* or *Rœmer*, 1836).
Bronn, Index, p. 1241.
Terebratula longirostris, *Münster, in Cambridge Museum* (not *Wahl.*).
Fossil. *U. Greensand* ("*Uebergangskalkstein*?"). Poland (*Pusch*); Belgium.
Hilse. Elligser Brinkes, Saxony (*Rœmer*).

16. WALDHEIMIA TAMARINDUS. B.M.

Shell "oval, smooth; margin very obtuse; disk rather flattened; beak but little curved, with an angular, slightly prominent ridge on each side, passing down the sides of the valve." Lon. 7, lat. 6, alt. 4 lines.

Terebratula tamarindus, *J. Sow. Geol. Trans.* 1836, iv. pt. 2. p. 338. pl. 14. f. 8.
D'Orb. Ter. Crét. iv. t. 503. f. 1–10; *Prod.* ii. p. 85.
Fossil. *Neocomian.* England; France; Germany.

17. WALDHEIMIA PSEUDO-JURENSIS. B.M.

Shell ovate-oblong, or subpentagonal, truncated in front, smooth; valves convex, both slightly furrowed in front; edges sharp; margins quite even; beak scarcely curved; foramen moderate, round; deltidium conspicuous; loop elongated, reflected. Lon. 11, lat. 7, alt. 6 lines.

* *Terebratula longa*, Rœmer, is perhaps a distinct species; the beak is more prominent, the sides nearly parallel, the front margin broader, more truncated, and much depressed.

Terebratula pseudo-jurensis, *Leym.* 1841, *Mém. Soc. Géol. Fr.* iv. p. 342; v. p. 12. pl. 15. f. 5, 6.
D'Orb. Ter. Crét. iv. p. 74. t. 505. f. 11–16; *Prod.* ii. p. 85.

Fossil. *Neocomian.* France; Switzerland.

18. WALDHEIMIA PECTORALIS.

Shell orbicular, somewhat pentagonal, smooth, with obscure granulated rays; dorsal valve rather flat; ventral convex; beak depressed, keeled; foramen small.

Terebratula pectoralis, *Rœmer*, 1840, *Kreid.* 42. t. 7. f. 19.
Reuss, Böhm. Kreid. p. 52. t. 26. f. 12.

Fossil. *Neocomian.* Germany.

19. WALDHEIMIA FABA.

Shell elliptical, narrow, gibbose; front indented, but not elevated, very narrow; beak short, but prominent. Lon. 7, lat. 4, alt. 4 lines.

Terebratula faba, *J. Sow.* 1836, *Geol. Tr.* iv. 2. p. 338. pl. 14. f. 10.
D'Orb. Ter. Crét. iv. t. 506. f. 8–12?; *Prod.* ii. p. 85.

Fossil. *Lower Greensand.* Between Folkestone and Sandgate (Mus. Rev. G. E. Smith).

20. WALDHEIMIA DIGONA. B.M.

Shell oblong, triangular, smooth; front margin straight, with two prominent angles; beak rather produced, with short lateral ridges; foramen small and round; deltidium rather long; loop simple, elongated. Lon. 13, lat. 9, alt. 8 lines.

Terebratula sacculus minor, *Llhwyd*, 1699, *Lith. Brit. Ichn.* t. 10. f. 873.

Terebratula digona, *Sow. Min. Con.* 1812, i. p. 217. t. 96. f. 1–5; *Encycl. Meth.* pl. 240. f. 5.
Smith, Strat. Syst. 1816.
Buch, Mém. Soc. Géol. France, iii. p. 194. pl. 17. f. 6.
Davidson, Mon. Ool. p. 38. pl. 5. f. 18–24.
Rœmer, Nordd. Ool. p. 49.
Quenst. Handb. p. 467. t. 37. f. 35.

Fossil. *Bath Oolite* (*Bradford Clay*). England; France; Germany.

21. WALDHEIMIA ARDUENNENSIS.

Shell subtrigonally inflated, wider than long, much enlarged and truncated in front, and diminishing gradually to the beak.

Terebratula Arduennensis, *D'Orb.* 1850, *Prod.* i. p. 377.

Fossil. *Oxford Clay.* France.

22. WALDHEIMIA ROYERIANA.

Shell oval, inflated, smooth or marked (especially near the border) with numerous lines of growth; rounded and compressed when young; oblong and slightly truncated in front when old; beak obtuse, recurved, keeled; foramen small, round. Lon. 12, lat. 8, alt. 7 lines.

Terebratula Royeriana, *D'Orb.* 1845.
Murch. Russia, ii. p. 484. pl. 42. f. 33, 34.
D'Orb. Prod. 1850, p. 344 & 377.
Terebratula vulgaris, *Fischer*, 1843, *Bull. Nat. Moscow*, xvi. p. 26 (not *Schl.*).
Terebratula ornithocephala, *Id.* p. 27. pl. 4. f. 1, 2 (not *Sow.*).
Fossil. *Kelloway Rock*? France.
Oxford Clay. Russia.

23. WALDHEIMIA STROGONOFII.

Shell oval, elongated, slightly truncated in front, ventricose, smooth; margins even; ventral valve most convex; beak rounded, recurved; foramen moderate, circular; deltidium nearly concealed. Lon. 28, lat. 17, alt. 14 lines.

Terebratula Strogonofii, *D'Orb.* 1845, *Murch. Russia*, ii. p. 483. pl. 42. f. 31, 32; *Prod.* i. p. 377.
Fossil. *Oxford Clay*. Russia.

24. WALDHEIMIA OBOVATA. B.M.

Shell oval, truncated in front, with obscure angles, smooth, ventricose; beak short, rather recurved, with short curved lateral ridges; deltidium more or less concealed; loop simple, elongated. Lon. 15, lat. 13, alt. 10 lines.

Terebratula obovata, *Sow.* 1812, *Min. Con.* i. p. 228. t. 101. f. 5.
Davidson, Mon. Ool. p. 39. pl. 5. f. 14–17.
Fossil. *Bath Oolite* (*Cornbrash*). England; France.

25. WALDHEIMIA LAGENALIS. B.M.

Shell smooth, ovate, elongated, ventricose, wide and straight in front; beak rounded, much recurved, with indistinct lateral ridges; foramen moderate; deltidium concealed; loop simple, elongated. Lon. 22, lat. 12, alt. 11 lines.

Terebratula sacculus longissimus, *Llhwyd*, 1699, *Lith. Brit.* t. 10. f. 871.
Terebratula lagenalis, *Schl. Petref.* 1820, p. 284.
Lam. ed. Desh. vii.
Buch, Mém. Soc. Géol. France, iii. p. 194. pl. 18. f. 7.
Dav. Mon. Ool. p. 42. pl. 7. f. 1–4.
Quenst. Handb. p. 468. t. 37. f. 48.

Terebratula umbonella, *Val.* 1819, *in Lam. An. s. Vert. Dav. Ann. Nat. Hist.* June 1850, pl. 13. f. 18.

Fossil. *Cornbrash.* England; France; Germany.

26. WALDHEIMIA SUBLAGENALIS. B.M.

Shell smooth, oblong, ventricose; front margin wide, truncated, slightly indented; beak rounded, recurved; valves slightly hollowed in the middle, in front, with rounded lateral ridges and prominent angles. Lon. 15, lat. 8, alt. 9 lines.

Terebratula sublagenalis (*Rœmer*?, 1836, *Verst. Nordd. Ool.* p. 49), *Dav. Mon. Ool. Brach.* p. 42. pl. 7. f. 14.

Fossil. *Cornbrash.* England; France.
(*Lias.* Germany; Willershausen.)

27. WALDHEIMIA ORNITHOCEPHALA.

Shell smooth, rhombic-ovate, becoming elongated and ventricose with age, rather narrow and truncated in front; beak rounded and recurved; foramen moderate; deltidium concealed; loop simple, elongated. Lon. 16, lat. 11, alt. 10 lines.

Llhwyd, Lith. Brit. pl. 10. f. 873.

Terebratula ornithocephala, *Sow.* 1812, *Min. Con.* i. p. 227. t. 101. f. 2, 3, 4.
Smith, Strat. Syst. 1816.
Lam. ed. Desh. vii. p. 361.
Phil. Geol. Yorks. i. t. 6. f. 7.
Zieten, Würt. t. 39. f. 2.
Davidson, Mon. Ool. p. 40. pl. 7. f. 6, 13, 23.
Rœmer, Nordd. Ool. p. 51.
Pusch, Polens Pal. p. 19. t. 3. f. 17.

Terebratula lampas, *Sow. Min. Con.* p. 228 (cast).
D'Orb. Prod. i. p. 239.

Terebratula subovalis et subovoides, *Rœmer, Ool.* pl. 2. f. 9, 10?

Terebratula triquetra, *Sow. Min. Con.* v. p. 65. t. 445. f. 1 (not *Rœmer, Nordd. Ool.* p. 48).

Terebratula subtriquetra, *D'Orb. Prod.* i. p. 216.

Fossil. *Kelloway Rock—Fuller's Earth.* England; France; Germany.

28. WALDHEIMIA IGNACIANA.

Shell oval-oblong, slightly convex, smooth, truncated in front; ventral valve deep; beak short, recurved; foramen moderate. Lon. 16, lat. 11, alt. 8 lines.

Terebratula Ignaciana, *D'Orb.* 1842, *Pal. Amer. Merid.* p. 63. pl. 22. f. 14, 15; *Prod.* i. p. 221.

Fossil. *Lias.* Chili.

29. WALDHEIMIA BUCCULENTA. B.M.

Shell oval, attenuated in front, smooth, ventricose; margins almost straight; beak small, recurved; foramen small; deltidium concealed. Lon. 13, lat. 12, alt. 8 lines.

Terebratula bucculenta, *Sow.* 1825, *Min. Con.* v. p. 54. t. 438. f. 2.
D'Orb. Prod. i. p. 376, ii. p. 24.
? *Zieten, Würt.* t. 39. f. 6.
Deslong. Soc. Lin. Normandie.
Davidson, Mon. Ool. p. 55. pl. 13. f. 8.
Terebratula bullata, syn., *Buch, Mém. Soc. Géol. France,* iii. p. 195.
Morris, Cat. p. 132.
Bronn, Index Pal. ii. p. 1231.

Fossil. *Coralline Oolite.* Malton, Yorkshire. (Mus. Sow.)

30. WALDHEIMIA SUBOVOÏDES.

Shell ovate, smooth; valves convex, slightly truncated in front; beak small, recurved; foramen small, round; deltidium distinct. Lon. 14, lat. 11, alt. 8 lines.

Terebratula subovoides (*Münster*), *Braun, Bair.* p. 43.
Rœmer, Nordd. Ool. p. 50. t. 2. f. 9.
Bronn, Index, p. 1252.
Terebratula subovalis, *Rœmer,* 1836, *Nordd. Ool.* p. 50. t. 2. f. 10 (according to *Bronn, Index,* p. 1252).

Fossil. *Lias.* Germany.

31. ? WALDHEIMIA SARTHACENSIS.

Terebratula Sarthacensis, *D'Orb. Prod.* 1850 (T. ornithocephala, *Sow.* pl. 101. f. 5?).

Fossil. *Lias* (*Upper*). France.

32. WALDHEIMIA CRITHEA.

"An oval shell, resembling *T. Sarthacensis,* but with a large foramen, and not truncated in front."

Terebratula Crithea, *D'Orb. Prod.* 1850, p. 258.

Fossil. *Lias* (*Upper*). France.

33. WALDHEIMIA LINNEANA.

Shell wide and short; front straight, without inflections.

Terebratula Linneana, *D'Orb.* 1850, *Prod.* i. p. 344.

Fossil. *Kelloway Rock*? France.

34. WALDHEIMIA NUMISMALIS. B.M.

Shell depressed, somewhat pentagonal, smooth, with distant concentric striæ; both valves with a sinus in front; beak short, keeled; foramen minute; deltidium wide and short; loop elongated, reflected. Lon. and lat. 11–13, alt. 4–6 lines.

Terebratula numismalis, *Val. in Lamk.* 1819, *Hist.* vii. 334. n. 17.
Brug. Encyc. Méth. t. 240. f. 1.
Buch, Mon. Tereb. 84. n. 4.
Desh. E. M. iii. 2028. n. 18.
Zieten, Petref. t. 39. f. 4.
Davidson, Mon. Ool. p. 27. pl. 5. f. 1–3.
Rœmer, Nordd. Ool. p. 47.
Quenst. Handb. p. 467. t. 37. f. 32, 33.
Terebratula orbicularis (*Schlotheim*), *Zieten, Petref. Würt.* t. 39. f. 15.
Terebratula Cor, *Val. in Lam. Hist. Nat.*
Dav. Ann. Nat. Hist. June 1850, pl. 15. f. 22.
Terebratula pentagona, *Münster, in Cambridge Museum?*
Terebratula quadrifida, *Quenst. Handb.* p. 467. t. 37. f. 28.

Fossil. *Lias.* Britain; France; Wurtemberg.

35. WALDHEIMIA QUADRIFIDA. B.M.

Shell broader than long, somewhat pentagonal, depressed, produced into four angles in front; valves with corresponding ridges and depressions; beak small, with acute lateral ridges; foramen moderate; deltidium double, obtuse; loop elongated, reflected. Lon. 14, lat. 18, alt. 7 lines.

Terebratula quadrifida, *Val. in Lam.* 1819, *An. sans Vert.* vi. p. 35.
Buch, Mém. Soc. Géol. France, iii. p. 190. pl. 17. f. 3.
Davidson, Mon. Ool. p. 28. pl. 3. f. 8–10; *Ann. Nat. Hist.* June 1850, pl. 14. f. 35.

Fossil. *Lias* (Marlstone). England; France.

36. WALDHEIMIA CAUSONIANA.

Allied to *T. cornuta*, but always much wider, and the two projections from the pallial region wider apart.

Terebratula Caussonia, *D'Orb.* 1847, *Prod.* i. p. 221.

Fossil. *Lias.* France.

37. WALDHEIMIA CORNUTA. B.M.

Shell smooth and shining, irregularly pentagonal, longer than wide; valves equally convex, deeply indented in front, with corresponding projections and depressions; beak large, recurved, with strong lateral ridges; foramen moderate; deltidium double;

loop simple, nearly reaching the front margin. Lon. 20, lat. 13, alt. 12 lines.

Terebratula cornuta, *Sow. Min. Con.* 1825, v. p. 66. pl. 446. f. 4.
Davidson, Mon. Ool. p. 29. pl. 3. f. 11–18.
Terebratula vicinalis, *Buch*, 1838, *Mém. Soc. Géol. France*, iii. p. 192. pl. 17. f. 5 (not *Schloth.*).
Rœmer, Nordd. Ool. p. 47.

Fossil. *Lias.* England; France; Germany.

38. WALDHEIMIA BIDENTATA.

Shell small, oblong, ventricose, contracted and indented in front; valves smooth, each with a deep mesial furrow in front; dorsal valve inflated; beak very small, keeled; foramen minute. Lon. 7, lat. 4, alt. 4 lines.

Terebratula bidentata, *Zieten*, 1830, p. 59. pl. 44. f. 3 (not *His.*).
Terebratula sub-bidentata, *D'Orb. Prod.* i. p. 288.

Fossil. *Inferior Oolite.* Germany.

39. WALDHEIMIA VICINALIS. B.M.

Shell trigonal or oval, truncated and indented in front, smooth;* valves equally convex, each with a shallow sinus in front, between very obtuse corresponding ridges; edges thick, obtuse; margins quite even; beak small, recurved, sharply keeled at the sides; foramen minute; loop elongated, reflected. Lon. 11, lat. 9, alt. 6½ lines.

Terebratula vicinalis, *Schl.* 1820, *Petref.* p. 281*.
Buch, Mém. Soc. Géol. France, iii. p. 192 (excl. plate).
Terebratula digona, *Zieten*, pl. 39. f. 8? (not *Sow.*).
Terebratula cornuta, *Rœmer* (not *Sow.*).
Terebratula numismalis δ, *Quenst. Handb.* p. 467. t. 37. f. 26.

Fossil. *Lias.* Wurtemberg.

40. WALDHEIMIA REHMANNI.

Shell widely ovate, or subpentagonal, truncated and slightly indented in front, rounded at the sides, ventricose, smooth; beak small, recurved, sharply keeled; foramen minute; deltidium triangular, solid. Lon. 10, lat. 9, alt. 6 lines.

Terebratula Rehmanni (*Buch*), *Rœmer*, 1839, *Nordd. Ool.* p. 21. t. 18. f. 11.

Fossil. *Lias.* Saxony.

* The reference made by Schlotheim to Parkinson, iii. 16. f. 4, shows that he did not intend the shell afterwards named *T. cornuta* by Sowerby.

41. WALDHEIMIA FISCHERIANA. B.M.

Shell oblong, truncated and indented in front, smooth; edges very obtuse; margins even; ventral valve gibbose; beak short, recurved, laterally keeled; foramen small, round; deltidium solid, triangular. Lon. 4 lines (*D'Orb.*). Lon. 11, lat. 8, alt. 6 lines (Brit. Mus.).

Terebratula Fischeriana, *D'Orb.* 1845, *Murch. Russia*, ii. p. 482. pl. 42. f. 27–30; *Prod.* i. p. 377.
Terebratula digona, *Zieten, Würt.* p. 53. pl. 39. f. 8 (*D'Orb.*). *Fischer, Oryct. Moscow*, pl. 23. f. 7 (not *Sow.*).
Terebratula indentata, *Fischer, Bull. Moscow*, xvi. p. 24. pl. 4. f. 3, 4 (not *Sow.*).
Terebratula nucleata, *Fischer, id.* p. 25. pl. 4. f. 5, 6 (not *Zieten*).
Fossil. *Oxford Clay.* Russia.
Coral Rag. Germany.

42. WALDHEIMIA LUNARIS.

Shell crescent-shaped, smooth; valves gibbose, concave in front; margins even; beak very small, depressed, keeled; foramen minute. Lon. 5½, lat. 7, alt. 4 lines.

Terebratula lunaris (*Schübler*), *Zieten*, p. 59. pl. 44. f. 4. *D'Orb. Prod.* i. p. 288.
Fossil. *Inferior Oolite.* Germany.

43. WALDHEIMIA PLANA. B.M.

Shell small, pentagonal, smooth; front truncated; margins even; dorsal valve rather flat, slightly depressed centrally in front, with indications of a long central septum; ventral valve convex, flattened in the centre, with two obscure ridges; beak recurved, laterally keeled; foramen small, round; deltidium incomplete. Lon. 5, lat. 5, alt. 3 lines.

Terebratula plana, *Münster in Cambridge Museum.*
Terebratula pentahedra, *id.*
Terebratula pentahedra, minor, (*Münster*) *Dr. Braun in British Museum.*
Terebratula nana, *id.*
Fossil. *Oxfordian—Coral Rag.* Bavaria.

44. WALDHEIMIA MARIÆ.

Like *T. cornuta*, but shorter, truncated, and straight in front.

Terebratula Mariæ, *D'Orb.* 1847, *Prod.* i. p. 240.
Fossil. *Lias.* France.

45. WALDHEIMIA EDWARDSII. B.M.

Shell ventricose, smooth, oval, truncated in front; smaller valve rather flat; margins quite straight; beak much recurved, with distinct lateral ridges; foramen small; deltidium scarcely visible; loop simple, elongated. Lon. 15, lat. 13, alt. 10 lines.

Terebratula Edwardsii, *Dav. Mon. Ool. Brach.* p. 30. pl. 6. f. 11–15.

Fossil. *Lias.* England.

46. WALDHEIMIA LYCETTII. B.M.

Shell smooth, subcircular, ventricose; beak rounded, lateral ridges indistinct; deltidium rudimentary, almost separated by the foramen; front margin slightly waved. Lon. 8, lat. 7, alt. 4 lines.

Terebratula Lycettii, *Dav. Mon. Ool. Brach.* p. 44. pl. 7. f. 17–22.
Terebratula numismalis, ovalis, *Quenst. Handb.* p. 467. t. 37. f. 27?

Fossil. *Lias.* Somersetshire; Germany.

47. WALDHEIMIA GLOBULINA. B.M.

Shell minute, circular, ventricose, smooth; margins even; beak minute, recurved, with short and curved lateral ridges; loop simple, short. Lon. 2, lat. 2, alt. 1 line.

Terebratula globulina, *Dav.* 1847, *Ann. Nat. Hist.* xx. pl. 19. f. 4; *Mon. Ool. Brach.* p. 57. pl. 11. f. 20, 21.

Fossil. *U. Lias.* Ilminster.

48. WALDHEIMIA COMMUNIS. B.M.

Shell oval, depressed, smooth, ornamented with diverging coloured rays; margins even, slightly raised in front; dorsal valve moderately convex, with a flattened, rounded ridge in front, depressed at the umbo and sides, furnished internally with a long central septum; ventral valve convex; beak not much curved, keeled at the sides; foramen moderate; deltidium concave. Lon. 16, lat. 14, alt. 8 lines.

Terebratula communis, *Bosc.* 1801, *Bourguet*, pl. 30. f. 194.
D'Orb. Prod. i. p. 177.
Terebratula vulgaris, *Schl. Petref.* pl. 37. f. 5, 6.
Zieten, Würt. pl. 39. f. 1.
Pusch, Polens Pal. p. 17. t. 3. f. 14, 15.
Quenst. Handb. p. 474. t. 5. f. 6.
Terebratula vulgaris, minor, *Münster, Beitr.* p. 62. t. 6. f. 13?

Fossil. *Muschelkalk.* France; Wurtemberg; Poland.
Trias? Tyrol.

c. Beak laterally keeled; dorsal valve with a longitudinal depression in the centre.

Terebratulæ Carinatæ acutæ, *Buch.*
Terebratulæ Impressæ, *Quenst.* 1851, *Handb.* p. 469.

49. WALDHEIMIA IMPRESSA. B.M.

Shell subcircular, polished; smaller valve flat, depressed in the middle in front; ventral valve convex; beak recurved, with lateral ridges; foramen minute; deltidium double; loop elongated, reflected, lamella very broad; septum nearly as long as the valve. Lon. 9 or 10, lat. 9, alt. 5 lines.

Terebratula impressa, *Buch*, 1832, *Ueber Terebrateln, Mém. Soc. Géol. France*, 1 ser. p. 226. pl. 20. f. 7, 1838.
Zieten, Würt. Verst. p. 53. pl. 39. f. 11.
Davidson, Mon. Ool. Brach. p. 33. pl. 4. f. 8–10.
Quenst. Handb. p. 468. t. 37. f. 36, 37.

Fossil. *Inferior Oolite.* Dorset; Cheltenham.
Oxford Clay. Huntingdonshire; Germany.

50.? WALDHEIMIA BERNARDINA.

"*Shell* like *T. pala*, but oval-obround, truncated in front, enlarged in the middle; small valve much depressed, with a furrow in the middle."

Terebratula Bernardina, *D'Orb.* 1850, *Prod.* i. p. 377.
Fossil. *Oxford Clay.* France.

51. ? WALDHEIMIA LABIATA.

Shell smooth, round or oval, depressed, truncated in front, or with the front of the little valve sunk, forming a deep sinus in the larger valve.

Terebratula labiata, *D'Orb.* 1850, *Prod.* i. p. 377.
Fossil. *Oxford Clay.* France.

52. ? WALDHEIMIA CHAUVINIANA.

Shell oblong; obtuse in front; beak pointed; small valve nearly flat, the other ventricose.

Terebratula Chauviniana, *D'Orb. Prod.* i. p. 344.
Fossil. *Kelloway Rock?* France.

53. ? WALDHEIMIA CALLOVIENSIS.

Shell like *T. Chauviniana*, but more inflated, especially the little valve; oval; front very variable, square or rounded, or even bilobed; small valve provided with a sinus.

Terebratula Calloviensis, *D'Orb.* 1850, *Prod.* i. p. 344.

Fossil. *Kelloway Rock*? France.

54. ?WALDHEIMIA RUPPELLENSIS.

Shell like *T. resupinata*, but with the small valve quite flat.

Terebratula Rüppellensis, *D'Orb.* 1850, *Prod.* ii. p. 24.

Fossil. *Coral Rag.* France.

55. WALDHEIMIA RESUPINATA. B.M.

Shell smooth, oval; smaller valve with a deep longitudinal depression; beak small, incurved, with prominent lateral ridges; foramen minute; deltidium wide, obtuse; loop simple, elongated. Lon. 16, lat. 14, alt. 12 lines.

Terebratula resupinata, *Sow. Min. Con.* 1818, ii. p. 116. t. 150. f. 3, 4.
Phil. Geol. Yorks. pl. 13. f. 23.
Buch, Mém. Soc. Géol. France, p. 229. pl. 20. f. 11.
Dav. Mon. Ool. Brach. p. 31. pl. 4. f. 1–5.
Quenst. Handb. p. 469. t. 37. f. 38.
Torrubia, Hist. Nat. Hispan. 1773, t. 9. f. 3.

Fossil. *Lias.* Britain; France; Germany.

56. ? WALDHEIMIA FLORELLA.

"Like *T. resupinata*, but without any depression in the middle of the smaller valve."

Terebratula florella, *D'Orb. Prod.* 1850, p. 258.

Fossil. *Lias (upper).* France.

57. WALDHEIMIA MOOREI. B.M.

Shell oblong, ventricose, smooth, with numerous strong lines of growth; smaller valve with an obscure longitudinal depression; margins depressed in front; beak small, laterally compressed and keeled; foramen minute; loop simple, elongated. Lon. 18, lat. 14, alt. 11 lines.

Terebratula Moorei, *Dav.* 1851, *Mon. Ool. Brach.* p. 33. pl. 4. f. 6, 7.

Fossil. *Lias.* England.

58. ? WALDHEIMIA SUBRESUPINATA.

"Like *T. resupinata*, but with the small valve not ventricose, and marked by a strong, medio-longitudinal impression."

Terebratula subresupinata, *D'Orb. Prod.* 1850, p. 287.

Fossil. *Inferior Oolite.* France.

59. WALDHEIMIA BAJOCINA.

"Like *T. subresupinata*, but more oval, more attenuated in front, and without the depression in the small valve."

Terebratula Bajocina, *D'Orb.* 1850, *Prod.* i. p. 288.

Fossil. *Inferior Oolite.* France.

60. WALDHEIMIA CARINATA. B.M.

Shell oblong, smooth, narrow and slightly truncated in front; smaller valve flat, with a central longitudinal depression; ventral valve convex, laterally compressed; beak slightly recurved, keeled; foramen moderate; deltidium double, rather long; loop simple, elongated. Lon. 13–20, lat. 9–17, alt. 5–10 lines.

Terebratula carinata, *Val.* 1819, *in Lam. An. sans Vert.* vi. p. 25.
Davidson, Mon. Ool. p. 35. pl. 4. f. 11–17; *Ann. Nat. Hist.* June 1850, pl. 13. f. 25.

Fossil. *Inferior Oolite.* England; Normandy.

61. WALDHEIMIA PENTAHEDRA. B.M.

Shell pentagonal, depressed, smooth, with numerous imbricating lines of growth; dorsal valve nearly flat, ventral convex; beak prominent, scarcely curved, keeled at the sides; foramen rather large, deltidium distinct. Lon. 8, lat. 7, alt. 5 lines.

Terebratula pentahedra, *Münster, Beitrage*, p. 109.
Bronn, Index, p. 1244 (not *Ter. pentahedra minor*, Münst.).
Terebratula tetragona, *Rœmer*, 1836, *Nordd. Ool.* p. 52. t. 2. f. 13.

Fossil. *Coral Rag.* Saxony; Bavaria.
Inferior Oolite. Stroud (Brit. Mus.).

62. WALDHEIMIA SUBIMPRESSA. B.M.

Shell diamond-shaped, depressed, smooth, with a few strongly imbricated lines of growth; edges square; margins quite even; dorsal valve flat; ventral valve rather prominent along the centre; beak prominent, straight, with strong lateral ridges; foramen round; deltidium narrow, solid. Lon. 10, lat. 8, alt. 4½ lines.

Terebratula subimpressa, var. elongata, *Münster in Cambridge Museum.*

Terebratula bucculenta? *Zieten*, p. 52. pl. 39. f. 6 (not *Sow.*).
Terebratula emarginata, *Quenst. Handb.* p. 471. t. 37. f. 52 (not *Sow.*).

Fossil. *Inferior Oolite.* Bavaria.

63. WALDHEIMIA EMARGINATA. B.M.

Shell subrhombic, truncated and indented in front; smaller valve flat, sometimes longitudinally depressed in front; ventral valve convex; beak slightly recurved; deltidium distinct; foramen moderate; loop simple, elongated. Lon. 11, lat. 10, alt. 6 lines.

Terebratula emarginata, *Sow.* 1825, *Min. Con.* v. p. 50. pl. 435. f. 5.
Deslong. 1837, *Soc. Lin. Normandie.*
Davidson, Mon. Ool. p. 35. pl. 4. f. 18–21.

Fossil. *Inferior Oolite.* England; Normandy.

64. WALDHEIMIA HUMERALIS. B.M.

Shell obovately pentagonal, widest above the centre, narrow in front, depressed, smooth; dorsal valve rather flat; ventral valve convex, with an obtuse longitudinal ridge; beak small, incurved, keeled at the sides. Lon. 8, lat. 6½, alt. 4 lines (12½ : 10½ : 7½ Cambr.).

Terebratula humeralis, *Rœmer*, 1839, *Nordd. Ool.* ii. p. 21. t. 18. f. 14.
Bronn, Index, p. 1238.

Fossil. *Portland Oolite.* Germany.

65. WALDHEIMIA WATERHOUSII. B.M.

Shell smooth, subquadrate, longer than wide; small valve concave in front; beak small, with acute lateral ridges; deltidium double; loop simple, elongated. Lon. 9, lat. 7, alt. 6 lines.

Terebratula Waterhousii, *Dav.* 1851, *Mon. Ool.* p. 31. pl. 5. f. 12, 13.

Fossil. *Lias.* England; Wurtemburg.

66. WALDHEIMIA BAKERIÆ. B.M.

Shell smooth, semicircular; dorsal valve depressed in the middle in front; wider than long; ventral valve convex; beak small, with indistinct lateral ridges; foramen entire, nearly touching the umbo of dorsal valve. Lon. 4, lat. 5, alt. 2½ lines.

Terebratula Bakeriæ, *Dav. Mon. Ool. Brach.* 1851, p. 38. pl. 5. f. 11.

Terebratula Heyseana, *Dunker?*

Fossil. *Inferior Oolite.* Northampton (Brit. Mus.).

67. WALDHEIMIA HEYSEANA. B.M.

Shell transverse, somewhat trigonal, winged, smooth; dorsal valve slightly convex, deeply depressed in the centre in front; ventral valve more convex, with a prominent central rounded ridge; beak depressed, curved, sharply keeled; foramen minute; deltidium triangular. Lon. 5, lat. 6, alt. 3 lines.

Terebratula Heyseana, *Dunker*, 1847, *Pal.* i. p. 129. pl. 18. f. 5.
Quenst. Handb. p. 471. t. 37. f. 47.

Terebratula resupinata, *Rœmer*, 1836, *Nordd. Ool.* p. 55. t. 12. f. 7 (not *Sow.*).

Fossil. *Lias.* Germany.

68. WALDHEIMIA HEMISPHÆRICA. B.M.

Shell minute, hemispherical, striated; dorsal valve flat, or slightly concave; ventral valve convex; beak recurved, with lateral ridges, forming a small flattened hinge-area; foramen rather large, round, incomplete; deltidium plates disunited. Lon. 4, lat. 3½, alt. 2 lines.

Terebratula hemisphærica, *Sow.* 1829, *Min. Con.* vi. p. 69. t. 536. f. 1.
Desh. 1837, *Soc. Lin. Normandie.*
Davidson, Mon. Ool. p. 64. pl. 13. f. 17, 18.

Terebratella hemisphærica, *D'Orb. Prod.* i. p. 316.

Fossil. *Bath Oolite.* England; France.

69. WALDHEIMIA PALA. B.M.

Shell oval when young, afterwards elongated, and truncated in front; sides parallel, straight; valves smooth, or with a few lines of growth near the margin; margins even; dorsal valve flat, with a longitudinal furrow, becoming wide and shallow in front; beak prominent, recurved, laterally keeled; foramen minute; deltidium wide, solid; internal septum elongated, prominent. Lon. 12, lat. 7, alt. 6 lines.

Terebratula pala, *Buch*, 1843, *über Terebrateln*, p. 115. t. 3. f. 44; *Mém. Soc. Géol. Fr.* iii. p. 228. pl. 20. f. 9.
Bronn, Index, p. 1244.
Quenst. Handb. p. 469. t. 37. f. 46.

Fossil. *Alpenkalk.* Tyrol.

70. WALDHEIMIA SEATONIANA.

Shell resembling *T. pala.*

Terebratula Seatoniana, *Portlock*, 1844, *Proc. Geol. Soc.* p. 357.
Fossil. *Jurassic? limestone.* Corfu.

71. WALDHEIMIA SUBANGUSTA. B.M.

Shell small, oval, smooth, with a few strong lines of growth, punctate; dorsal valve circular, nearly flat, with a medio-longitudinal furrow, and indications of an internal median septum; ventral valve convex; beak prominent, rounded, recurved, truncated by a small foramen. Lon. 5½, lat. 4½, alt. 3 lines.

Terebratula subangusta, *Münst.* 1841, *Beitr.* iv. p. 64. pl. 6. f. 16.
D'Orb. Prod. i. p. 204.
Terebratula præmarginata, *Klipst.* 1844, p. 222. pl. 15. f. 6.
D'Orb. Prod. i. p. 204.
Fossil. *Trias.* Tyrol.

72. WALDHEIMIA ANGUSTA.

Shell small, elongated, oval, smooth; dorsal valve slightly convex, impressed in the middle in front; margins even; beak rounded, recurved; foramen small. Lon. 5, lat. 3, alt. 2½ lines.

Terebratula angusta, *Schl.* 1820, *Petref.* p. 285.
Buch, Mém. Soc. Géol. Fr. iii. p. 217. pl. 20. f. 80.
Dunker & Meyer, Palæont. p. 285. pl. 34. f. 1–4.
D'Orb. Prod. i. p. 177.
Fossil. *Muschelkalk.* Silesia.

73. WALDHEIMIA? NAVICULA. B.M.

Shell oval, boat-shaped, smooth; dorsal valve concave, raised at the sides, depressed in front, with a prominent longitudinal septum inside; ventral valve convex, with a very prominent, obtuse, longitudinal ridge; beak prominent, closely recurved; foramen minute, complete; muscular impressions deep. Lon. 6, lat. 4, alt. 4 lines.

Terebratula navicula, *J. Sow.* 1839, *in Murch. Silur. Syst.* p. 611. pl. 5. f. 17.
Barrande, Silur. Böhm. p. 46. pl. 15. f. 4.
D'Orb. Prod. i. p. 43.
Hemithyris navicula, *M'Coy, Pal. Foss.* p. 204.
Fossil. *Upper Silurian**. England; Germany.

* Nearly all the Silurian "Terebratulæ" have been ascertained to possess calcareous spires and must therefore be removed from the family.

74. WALDHEIMIA? UMBRA.

Shell orbicular, depressed, slightly truncated in front, smooth; dorsal valve with a deep longitudinal furrow becoming wider in front; margins evenly sinuated; ventral valve with an obtuse longitudinal ridge; beak very small, recurved. Lon. and lat. 7, alt. 3 lines.

Terebratula umbra, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 401. t. 17. f. 3.
Atrypa umbra, *D'Orb. Prod.* i. p. 38.
Fossil. *U. Silurian.* Bohemia.

75. WALDHEIMIA? UPSILON. B.M.

Shell subpentagonal, truncated and indented in front, ventricose, smooth; margins even, slightly arched in front; edges thick, rounded; valves equally convex, each with two rounded ridges, separated by a shallow sinus, in front; beak small, laterally compressed, recurved. Lon. 11, lat. 10, alt. 7 lines.

Terebratula upsilon, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 405. t. 15. f. 9.
Atrypa? upsilon, *D'Orb. Prod.* i. p. 40.
Hemithyris upsilon, *M'Coy, Pal. Foss.* p. 207.
Fossil. *U. Silurian.* Bohemia; Wales.

76. WALDHEIMIA? JUNO.

Shell oval, widely truncated in front, depressed, smooth; margins even; valves equally convex, slightly sinuated in front; beak small, compressed. Lon. 8, lat. 7, alt. 4 lines.

Terebratula Juno, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 407. t. 15. f. 10.
Atrypa Juno, *D'Orb. Prod.* i. p. 40.
Fossil. *U. Silurian.* Bohemia.

77. WALDHEIMIA? CANALIS.

Shell oval or orbicular, smooth; both valves with a deep mediolongitudinal furrow; margins even, deeply indented in front; beak small, recurved. Lon. 6, lat. 4½ lines.

Terebratula canalis, *J. Sowerby*, 1839, *in Murch. Silur. Syst.* p. 611. t. 5. f. 18.
Barr. Silur. Böhm. p. 410. t. 16. f. 13.
Atrypa canalis, *D'Orb. Prod.* i. p. 40.
Fossil. *U. Silurian.* England; Bohemia.

78. WALDHEIMIA? INELEGANS.

Shell orbicular, ventricose, smooth; margins even; valves equally convex; edges obtuse; ventral valve with an obscure longitudinal furrow; beak small, recurved. Lon. and lat. 7, alt. 4½ lines.

Terebratula inelegans, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 408. t. 17. f. 1.
Atrypa inelegans, *D'Orb. Prod.* i. p. 38.
Fossil. *U. Silurian.* Bohemia.

79. WALDHEIMIA? EPHEMERA.

Shell orbicular, smooth, slightly indented in front; margins even; valves equally convex, slightly sinuated in front; beak small, recurved. Lon. and lat. 5, alt. 3½ lines.

Terebratula ephemera, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 408. t. 16. f. 11.
Atrypa? ephemera, *D'Orb. Prod.* i. p. 38.
Fossil. *U. Silurian.* Bohemia.

80. WALDHEIMIA? HECATE.

Shell orbicular, slightly pentagonal, smooth; valves convex, margins sinuous, slightly arched in front; beak small, prominent, recurved. Lon. 9, lat. 10, alt. 6 lines.

Terebratula Hecate, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 409. t. 16. f. 12.
Spirigera Hecate, *D'Orb. Prod.* i. p. 43.
Fossil. *U. Silurian.* Bohemia.

81. WALDHEIMIA? SECURIS.

Shell trigonal, smooth, umbones convex; margins even; edges sharp; front very wide, and like the sides nearly straight; beak very small. Lon. 9, lat. 10, alt. 4½ lines.

Terebratula securis, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 388. t. 16. f. 1.
Atrypa securis, *D'Orb. Prod.* i. p. 39.
Fossil. *U. Silurian.* Bohemia.

82. WALDHEIMIA? OBOLINA.

Shell transversely oblong, smooth; valves equally convex; margins even; edges sharp; beak minute. Lon. 7, lat. 8, alt. 4 lines.

Terebratula obolina, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 404. t. 20. f. 9.
Atrypa obolina, *D'Orb. Prod.* i. p. 40.
Fossil. *U. Silurian.* Bohemia.

83. WALDHEIMIA? HAMIFERA.

Shell orbicular, convex, smooth, with very obscure radiating striæ. Lon. 18, lat. 19 lines.

Terebratula hamifera, *Barrande*, 1847, *in Haidinger's Abhandl.* p. 417. t. 20. f. 9.
D'Orb. Prod. i. p. 43.
Fossil. *U. Silurian.* Bohemia.

d. Beak round; valves sharply plaited. Eudesia.

Terebratulæ costatæ, *Morris*, 1846, *Journ. Geol. Soc.* p. 385.
Eudesia (orbicularis), *King*, 1849, *Permian Fossils*, 81. 144.

84. WALDHEIMIA GRAYII. B.M.

Shell suborbicular, ornamented with numerous radiating ribs; ribs unequal, bifurcating and intercalating; colour reddish yellow, becoming deep red at the lines of growth; dorsal valve rather flat; ventral valve convex; beak obtuse, with distinct lateral ridges; foramen very large, incomplete; deltidia disunited; loop elongated, reflected. Lon. 14, lat. 15, alt. 9 lines.

Terebratula Grayii, *Davidson*, May 1852, *Ann. Nat. Hist.* p. 365; *Zool. Proc.* 1852, p. . pl. . f. 1–3.
Hab. Korea.

85. WALDHEIMIA BEAUMONTI. B.M.

Shell oval, inflated, ornamented with 12–14 elevated, radiating plaits, sometimes bifurcating, and crossed by numerous lines of growth; valves equally convex; beak prominent, nearly straight, pointed; foramen small; area concave; deltidium large, triangular. Lon. 6½, lat. 5, alt. 4 lines.

Terebratula Beaumonti, *D'Arch.* 1847, *Mém. Soc. Géol. Fr.* ii. p. 331. pl. 21. f. 12–14.
D'Orb. Prod. ii. p. 172.
Fossil. *U. Greensand.* Belgium.

86. WALDHEIMIA MARCOUSANA.

Shell orbicular, ventricose, with 18–20 sharp radiating plaits; valves equally convex, margins dentated; beak short, curved,

truncated by a moderate, round foramen; deltidium triangular, distinct. Lon. 13, lat. 13, alt. 8 lines.

Terebratula Marcousana, *D'Orb. Ter. Crét.* iv. p. 82. t. 507. f. 11–14; *Prod.* ii. p. 85.

Fossil. *Neocomian.* France.

87. WALDHEIMIA SEMISTRIATA. B.M.

Shell angularly ovate or rounded, with 24–30 sharp radiating plaits; umbones smooth; beak prominent; foramen moderate; deltidium elongated; dorsal valve with two elevated ridges or angles in front. Lon. 14, lat. 12, alt. 8 lines.

Terebratula semistriata, *Defrance*, 1828, *Dict. Sc. Nat.* t. liii. p. 156.

D'Orb. Ter. Crét. iv. p. 83. t. 508. f. 1–11; *Prod.* ii. p. 85.

Terebratula suborbicularis, *D'Arch.* 1839, *Mém. Soc. Géol. Fr.* iii. p. 311.

Leym. 1842, *Mém. Soc. Géol. Fr.* v. p. 18. pl. 14. f. 2, 3.

Terebratula biangularis, (*Desh.*) *Leym.* 1842, *Mém. Soc. Géol. Fr.* v. p. 11. pl. 14. f. 4.

Reuss, Verst. Böhm. Kreid. p. 51.

Terebratula propinqua, *Münster MS., Jura, Hildesheim.*

Fossil. *Neocomian.* France; Switzerland.

88. WALDHEIMIA RETICULATA.

Shell oblong, inflated, partly smooth, or ornamented with radiating dichotomous striæ; dorsal valve with a sharp central elevation and two lateral folds; beak prominent, curved, laterally keeled; foramen moderate, round; deltidium double, elongated. Lon. 14, lat. 10, alt. 8 lines.

Terebratula reticulata, *Pusch*, 1837, *Polens Pal.* t. 3. f. 11 (not *Sow.*).

Terebratula Puscheana, *Rœmer*, 1841, *Kreid.* p. 114. no. 3. t. 16. f. 29.

Terebratella reticulata, *D'Orb. Ter. Crét.* iv. p. 112. t. 515. f. 1–6.

Fossil. *Neocomian.* France; Poland; Germany.

89. WALDHEIMIA OBLONGA. B.M.

Shell oblong, sharply plaited; plaits 20–40, simple or bifurcating, and becoming more numerous by intercalation; dorsal valve rather flat when young, becoming more convex with age; beak rather produced, nearly straight, with well-defined lateral ridges forming a flat area; foramen entire, slightly truncating the beak; deltidium double; distinct. Lon. 12, lat. 9, alt. 7 lines.

Terebratula oblonga, *Sow.* 1829, *Min. Con.* vi. p. 68. t. 535. f. 4-6.
Buch, Mém. Soc. Géol. Fr. iii. p. 359. pl. 16. f. 2.
Rœmer, Nordd. Ool. p. 46. t. 2. f. 23; *Kreid.* p. 39. no. 18.
Davidson, Mon. Cret. p. 51. pl. 2. f. 29-32.
Terebratella oblonga, *D'Orb. Ter. Crét.* iv. p. 113. pl. 515. f. 7-19.
? Terebratula quadrata, *J. Sow. Trans. Geol. Soc.* iv. pl. 14. f. 9.

Fossil. *Lower Greensand* (*Neocomian*). England; France; Switzerland; Germany.

90. WALDHEIMIA CARDIUM. B.M.

Shell oval, strongly plaited; ribs broad and sharp, about eighteen in number, simple or forked; dorsal valve subcircular, rather flat when young; ventral valve deep, with a large, truncated beak; foramen large, round; deltidium narrow, concave; loop simple, elongated. Lon. 16, lat. 12, alt. 11 lines.

Terebratula Cardium, *Val. in Lam.* 1819, *An. sans Vert.* vi. no. 47; *Encyc. Méth.* pl. 141. f. 6.
Deslong. Soc. Lin. Normandie.
Davidson, Ann. Nat. Hist. June 1850; *Mon. Ool.* p. 43. pl. 12. f. 13-18; *Ann. Nat. Hist.* June 1850, pl. 14. f. 47.
Terebratula orbicularis, *Sow.* 1829, *Min. Con.* vi. p. 68. t. 535. f. 3.
Buch, Mém. Soc. Géol. France, iii. ser. 1. p. 160. pl. 16. f. 3.
Rœmer, Nordd. Ool. p. 46.
Bronn, Index Paleont. p. 1243.
D'Orb. Prod. p. 315.
Quenst. Handb. p. 466. t. 37. f. 31.
Terebratula furcata, *Sow. Min. Con.* vi. p. 67. t. 535. f. 2 (young).

Fossil. *Bath Oolite* (*Bradford Clay*). England; France.

91. WALDHEIMIA? ADRIENI.

Shell suborbicular, rather depressed, ornamented with 17-20 sharp radiating plaits; valves nearly equally convex; beak rounded, curved, truncated by a circular foramen; deltidium distinct. Lon. 9, lat. 8, alt. 5 lines.

Terebratula Adrieni, *Vern. & Arch.* 1845, *Bull. Soc. Géol. Fr.* ii. pl. 14. f. 11.
D'Orb. Prod. i. p. 100.

Fossil. *Devonian.* Spain; Eifel.

92. WALDHEIMIA? PROMINULA.

Shell oblong, rather truncated in front, ornamented with twenty-four sharp radiating ribs; valves convex, slightly flattened along the centre; margins dentate; beak prominent, slightly curved, truncated by a round foramen; deltidium elongated, bordered by a smooth space. Lon. 10, lat. 8, alt. 5 lines.

Terebratula prominula, *Rœmer, Rhein. Ueberg.* p. 66. pl. 5. f. 3. *D'Orb. Prod.* i. p. 100.

Fossil. *Devonian.* Prussia.

93. WALDHEIMIA? ULOTHRIX.

Shell somewhat transverse, rounded, with 9–11 sharp radiating plaits; surface ornamented with wavy, concentric lines, especially near the margin; beak small, recurved; aperture rounded; area small, triangular, distinct. Lon. 6, lat. 7½, alt. 4 lines.

Terebratula crispata, *Koninck, Descr.* p. 292 (not *Sow.*).
Terebratula ulothrix, *Kon.* 1844, *id.* pl. 19. f. 5, note.
Terebratula subcrispata, *D'Orb.* 1847, *Prod.* i. p. 151.

Fossil. *Carboniferous.* Belgium.

94. WALDHEIMIA? TRILATERA.

Shell small, triangular, elongated, laterally compressed, ornamented with 18–22 sharp radiating plaits, each valve with a medio-longitudinal depression; beak short, acute, straight; foramen minute; area inconspicuous. Lon. 5½, lat. 4½, alt. 2½ lines.

Terebratula trilatera, *Koninck,* 1844, *Descr.* p. 292. pl. 19. f. 7. *D'Orb. Prod.* i. p. 151.

Fossil. *Carboniferous.* Belgium.

e. Beak elongated; valves ornamented with rounded ribs. Lyra.

Lyra (Meadi), *Cumberland,* 1816, *in Sow. Min. Con.*
Trigonosemus, *Kœnig, Icon. Sect.* (part.) 1825.
? Rhynchora (costata), *Dalman,* 1828, *Vetens. Acad.* p. 136. *Hisinger, Lethæa Suecica.*
Terebratulæ rostratæ, *Morris,* 1846, *Journ. Geol. Soc.* p. 385.
Rhynchoridæ, *King, Permian Fossils,* 81, 141.
Terebrirostra (lyra), *D'Orbigny,* 1848, *Ann. Sc. Nat. Terr. Crét.* iv. t. 519.
Dav. 1852, *Mon. Cret.* p. 31.

95. WALDHEIMIA DAVIDSONIANA.

Shell suborbicular, with a produced, tapering beak; valves trilobed, ornamented with simple, radiating ribs, decussated by a few marked lines of growth; dorsal valve transverse, with a raised central lobe; ventral valve with a longitudinal furrow; hinge-line nearly as wide as the shell; area triangular; foramen oval, small; deltidium elongated, triangular. Lon. 11, lat. 9, alt. 5 lines.

Terebrirostra Davidsoniana, *Ryckholt*, 1852, *Notice sur les genres Nautilus, &c.*, p. 10. f. 4–7.

Fossil. *U. Chalk.* Ciply, Belgium.

96. WALDHEIMIA PECTINATA. B.M.

Shell oblong, ventricose, truncated posteriorly, ornamented with rugose, bifurcating ribs; margins toothed, not sinuous; *dorsal valve* convex, with a wide and nearly straight hinge-line, furnished inside with a very wide cardinal process, and a short, prominent median septum; crura slender, contiguous; loop doubly attached?; *ventral valve* deep, truncated by a very large foramen*; area and deltidium nearly obsolete; teeth at the angles of the hinge. Lon. 16, lat. 19, alt. 9 lines (*Morris*).

Anomia pectinata, *Linn.* 1767, *Syst. Nat.* iii. p. 1150.

Anomites costatus, *Wahlenberg*, 1821, *Acta Upsal.* viii. p. 62. t. 4. f. 12–14.

Terebratula costata, *Nilsson*, *Petref. Suec.* p. 37. t. 3. f. 13.

Rhynchora costata, *Dalman*, 1828, *Vet. Acad.* p. 136. *Hisinger*, *Leth. Suec.* t. 20.

Terebratula lyra, (not *Sow.*), *Dalman*; *Hisinger*; *Bronn*; *Morris*.

Terebratula pectinata, *L. Appendix to Morris's Catalogue*, p. 216.

Fossil. *U. Chalk.* Sweden.

97. WALDHEIMIA LYRA. B.M.

Shell lyre-shaped, straight or slightly curved, striato-costate; beak about half as long as the shell, slender, tapering, truncated by a small, transversely oval foramen; deltidium narrow, as long as the beak, bordered on each side by a narrow flat area; dorsal valve oval, obtuse in front; ribs rounded, undulating, simple or bifurcating, or intercalary. Lon. 27, lat. 10, alt. 7 lines.

* The umbones of both valves are worn, as if by contact with the rock, in all the examples in London cabinets (*Woodward*).

Lyra Meadi, *Cumberland* (1816) *in Sowerby's Min. Con.*
Terebratula lyra, *Sowerby*, 1816, *Min. Con.* ii. p. 87. t. 138. f. 2.
Lam. An. sans Vert. vi. p. 255.
Smith, Strata Identified, f. 3.
Defr. Dict. Sc. Nat. liii. p. 160. pl. 62. f. 7.
Desh. Enc. Méth. iii. p. 1029; *in Lam.* ed. 2. vii. p. 344.
Buch, Mém. Soc. Géol. France, iii. p. 173. pl. 16. f. 17.
Dujardin, Dict. Univ. Hist. Nat. pl. 9. f. 5, 6.
Trigonosemus lyra, *König, Icones*, 1825, p. 4. pl. 6. f. 76, 77.
Bronn, Illust. Conch. pl. 49. f. 5–13.
Terebrirostra Lyra, *D'Orb. Ter. Crét.* iv. t. 519. f. 11–19; *Prod.* ii. p. 173.
Davidson, Mon. Cret. p. 32. pl. 3. f. 17–28.

Fossil. *U. Greensand.* England; France.

98. WALDHEIMIA ARDUENNENSIS.

Shell elongated, depressed, radiately ribbed; ribs dichotomous, irregular, wavy; beak very long, often curved; deltidium channelled. Lon. 24, dorsal valve 13, lat. 8 lines.

Terebrirostra Arduennensis, *D'Orbigny*, 1847, *Ter. Crét.* iv. p. 128. t. 519. f. 6–10.
Terebratula lyra, var.?

Fossil. *Gault.* France.

99. WALDHEIMIA BARGESANA. B.M.

Shell lyre-shaped, ornamented with radiating, bifurcating ribs; dorsal valve oblong, slightly truncated and depressed in front; beak moderately produced, tapering, with a very small, apical foramen; area level, triangular; deltidium tapering, trilineate. Lon. 12, lat. 9, alt. 7 lines.

Terebrirostra Bargesana, *D'Orbigny*, 1851, *Journ. de Conch.* ii. p. 225. pl. 4. f. 2–5.
Dav. Ann. Nat. Hist. April 1852, pl. 14. f. 5.

Fossil. *Greensand.* Santander, N. Spain.

100. WALDHEIMIA NEOCOMIENSIS.

Shell elongated, triangular, depressed, radiately ribbed; ribs dichotomous; valves very unequal, the dorsal slightly convex, the ventral with a straight, tapering beak; foramen small; deltidium elongated, triangular. Lon. 10 lines.

Terebrirostra neocomiensis, *D'Orb.* 1847, *Ter. Crét.* iv. p. 127. t. 519. f. 1–5; *Prod.* ii. p. 85.

Fossil. *Neocomian.* France.

101. WALDHEIMIA? LYRATA. B.M.

Shell orbicular, with a prominent beak; valves convex, ornamented with nine radiating rounded ribs; dorsal valve circular; beak produced, tapering, truncated by a minute foramen; area triangular, flat, sharply bordered; deltidium triangular, sunk. Lon. 4, lat. 3½, alt. 2½ lines.

Terebratula lyrata, *Münster*, 1841, *Beitr.* iv. p. 57. t. 6. f. 5 *c*.

Fossil. *Trias.* Tyrol.

102. WALDHEIMIA? HUMBOLDTII. B.M.

Shell obovate, with nine radiating plaits, crossed by a few imbricating lines of growth; middle plait smaller than the next; dorsal valve transverse, depressed in the centre, indented in front; beak elongated, tapering, truncated by a small round foramen; area triangular, flat, sharply bounded; deltidium narrow, sunk. Lon. , lat. , alt. lines.

Spirifer Humboldtii, *Klipstein*, 1844, *Beitr.* p. 233. t. 15. f. 17.
Terebratula lyrata (part.?), *Münst.* t. 6. f. 5 *a*, *b*?

Fossil. *Trias.* Tyrol.

103. WALDHEIMIA? PROCERRIMA. B.M.

Shell oval, with a long slender beak; valves ornamented with 12–13 radiating ribs; dorsal valve auriculate, with a small prominent umbo; central rib small, occupying a slight depression; hinge-line short and straight; beak elongated, tapering, curved, truncated by a minute foramen (or three foramina when broken); area long and narrow, sharply bounded. Lon. 5, lat. 3, alt. 2½ lines.

Spirifer procerrimus, *Klipstein*, 1844, *Beitr.* p. 233. pl. 15. f. 8.
D'Orb. Prod. i. p. 204.

Fossil. *Trias.* Tyrol.

Tribe II. MAGASINA.

Shell smooth or radiately plaited; dorsal valve with a longitudinal depression; hinge-line straight, or only slightly curved; area usually distinct; deltidium frequently incomplete; loop attached to the septum of the dorsal valve (fig. 8).

Magas, *Sow. Min. Conch.* 1816, t. 119.
Terebratula, § C, *Blainv. Dict. Sci. Nat.* liii. 145, 1828.
Terebratulidæ, § 2, *Gray, Ann. & Mag. Nat. Hist.* 1848, ii. 435.
Wiegm. Arch. 1849, 98.
Lovén, Arsb. 1848 and 1849, 213, & p. 8.
Terebratulidæ, part., et Magasidæ, part., *D'Orb. Ann. Sci. Nat.* 1847.
Terebratula, *Retzius, Gen.*

Mr. James Sowerby the elder gives a "partial longitudinal septum with appendages attached to the hinge within," as the character of the genus *Magas*, which is that of the whole tribe. He first pointed out the advantage of studying the internal apparatus, and observed in 1816, "It is much to be wished that some person would publish an account of the curious internal appendages of these shells."—*Mineral Conch.* t. 119.

M. de Blainville in 1828 (*Dict. Sci. Nat.* liii. 145) used the form of the internal apparatus to divide the Terebratulæ into six divisions. Section A. "Gripus, *Megerle*" = Terebratulinina. B. = Terebratella. C. = Terebratulinina. D. = Megerlia. E. = Bouchardia. F. = Argiope.

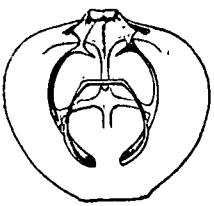
The genera into which the *Magasina* have been divided depend chiefly on modifications of the internal skelcton; these do not always correspond with the peculiarities of external form, or the character of the foramen and deltidium.

4. TEREBRATELLA.

Loop elongated, reflected, doubly attached;—to the hinge-plate, and also to the longitudinal septum by processes given off at right angles from the crura, near the centre of the valve.

Terebratella (chilensis), *D'Orb.* 1848, *Ann. Sc. Nat.* viii. 67.
King, 1849, *Permian Fossils*, 81, 144.
Dav. 1852, *Ann. Nat. Hist.* p. 366; *Mon. Cret.* p. 24.
Terebratulæ loricatæ, *Buch*, 1834, *über Terebrateln.*
Quenstedt, Handb. p. 463.
Terebratula (dorsata), *Retzius.*
Terebratella (dorsata), *D'Orbigny, Paleont. Franç.*
Delthyris (dorsata), *Menke, Syn.* ed. 2. p. 96.

Fig. 8. *Dorsal valve of Terebratella dorsata.*



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1. TEREBRATELLA DORSATA. B.M.

Shell broadly ovate, somewhat trilobed, whitish, radiately ridged, the lateral ridges more oblique than the mesial; margins denticulate; dorsal valve with a broad and shallow central depression; beak short; foramen very large, incomplete; deltidia small, triangular, separate; hinge-area large, rather flattened; loop elongated, reflected, attached to a central septum. Lon. 14, lat. 14, alt. 6 lines.

Anomia dorsata, *Gmelin*, 1788, *S. N.* 3348.
Dillwyn, *R. S.* i. p. 295.
Anomia striata Magellanica, *Chemnitz*, *Conch. Cab.* viii. p. 101. t. 78. f. 710, 711.
Terebratula, *Lamk. E. M.* t. 242. f. 1.
D'Avila, i. t. 20. f. A. *Da Costa*, *Elem.* t. 6. f. 7.
Terebratula dorsata, *Schum. N. S.* p. 133.
Lamk. Hist. ed. 2. vii. p. 331.
Blainv. Man. Malac. t. 51. f. 1; *D. S. N.* liii. p. 137, 145.
Sow. Gen. Shells, f. 3; *Thes. Conch.* viii. p. 346. t. 68. f. 15, 16, 17.
Küster, *Conch. Cab.* vii. p. 22. t. 1. f. 17; t. 2. f. 14, 15.
Delthyris dorsata, *Menke*, *Syn.* ed. 2. p. 96.
Hab. Straits of Magellan.

2. TEREBRATELLA FLEXUOSA. B.M.

Shell wider than long, somewhat pentagonal, rather gibbous, pale brown, with prominent, bifurcating, radiated ridges; margins sinuated and denticulated; dorsal valve with a broad, indistinct mesial groove; ventral valve with a short beak and a wide, flattened hinge-area; foramen large, incomplete; deltidia small, separate; loop elongated, doubly attached. Lon. 15, lat. 16 lines.

Terebratula flexuosa, *King*, *Zool. Journ.* v. p. 337.
G. B. Sow. Thes. Conch. vii. p. 347. t. 69. f. 23, 24.
Hab. Straits of Magellan.

3. Terebratella Chilensis.

Shell transversely oval, slightly gibbous, pale brown, with radiating ridges; margins crenulated; dorsal valve with a smooth, wide and shallow longitudinal groove in the centre; beak obtuse; hinge-area large and flattened; foramen large, incomplete; deltidia moderate, separate; loop elongated, doubly attached. Lon. 14, lat. 16 lines.

Terebratula Chilensis, *Broderip, Proc. Zool. Soc.* 1836, p. 134.
G. B. Sow. Thes. Conch. vii. p. 347. t. 68. f. 18, 19.
Terebratella Chilensis, *D'Orb. Ann. Sc. Nat.* 1848, viii. p. 67. t. 7. f. 13.
King, Permian Fossils, p. 81, 1850.
Hab. Valparaiso, at 90 fathoms.

4. Terebratella Soverbii. B.M.

Shell rounded, trilobed, rusty brown, with obscure radiating ribs; margins sinuated in front; dorsal valve with a broad, longitudinal, central depression; hinge-area large and flattened; foramen large and incomplete; deltidia small, disunited; loop elongated, doubly attached. Lon. 17, lat. 17, alt. lines.

Terebratula Soverbii, *King, Zool. Journ.* v. p. 338.
G. B. Sow. Thes. Conch. vii. p. 348. t. 68. f. 20, 21, 22.
Terebratella Soverbii, *Dav. Ann. Nat. Hist.* 1852, p. 367.
Hab. Straits of Magellan.

5. Terebratella Coreanica. B.M.

Shell quadrangular, smooth, pale brown with crimson rays; beak obtuse, with lateral ridges; hinge-area large; foramen large, complete; deltidia united; dorsal valve flattish; loop elongated, doubly attached. Lon. 13, lat. 13½ lines.

Terebratula Coreanica, *Adams & Reeve*, 1850, *Zool. Samarang*, p. 71. pl. 21. f. 3.
Terebratella Coreanica, *Dav.* 1852, *Ann. Nat. Hist.* p. 367.
Hab. Corean Archipelago.

6. Terebratella Bouchardii.

Shell suborbicular, smooth, of a uniform light yellow colour; beak produced, recurved, furnished with lateral ridges, and truncated by a large, circular and entire foramen; deltidia united; hinge-area slightly concave; dorsal valve depressed in the centre in front; loop elongated, doubly attached. Lon. 14, lat. 13, alt. 8 lines.

Terebratella Bouchardii, *Davidson*, 1852, *Ann. Nat. Hist.* p. 367; *Proc. Zool. Soc.* p. . pl. . f. 4–6.
Hab. ——? (Mus. Cuming.)

7. TEREBRATELLA RUBICUNDA. B.M.

Shell rounded, trilobed, gibbous, smooth, yellow-red, deeper at the lines of growth; margins sinuated in front; dorsal valve with a central, longitudinal furrow; beak rather produced, blunt; foramen large, nearly complete; deltidia large, separate; loop elongated, doubly attached. Lon. 12, lat. 11 lines.

Anomia rubicunda, *Solander MSS. Mus. Banks.*
Terebratula rubicunda, *Donovan, Nat. Repos.* t. 56. f. 2–4.
G. Sow. Thes. Conch. vii. p. 351. t. 70. f. 45–47.
Davidson, Ann. Nat. Hist. 1852, p. 367.
Terebratula inconspicua, *G. Sow. Thes. Conch.* vii. p. 359. t. 71. f. 102–104.
Hab. New Zealand.

8. TEREBRATELLA CRUENTA. B.M.

Shell rounded, ventricose, ornamented with radiating, dichotomous ribs, orange-red, deepest at the lines of growth; margins crenulated; dorsal valve with a central, longitudinal depression; beak somewhat produced, lateral ridges distinct; area large, rounded; foramen large, complete; deltidium large; loop elongated, doubly attached. Lon. 18, lat. 19, alt. 12 lines.

Lampas sanguineus, *Humph. Calonne Cat.* (not described).
Anomia sanguinea, *Solander MSS.* (*Humph. Cat.*) (not *Chemnitz*).
Terebratula sanguinea, *Leach, Zool. Misc.* t. 76.
Lam. An. sans Vert. vi. p. 243.
Donovan, Nat. Repos. t. 34.
Anomia cruenta, *Dillw. Syn.* p. 295, 1817.
Terebratula rubra, *Sow. Thes. Conch.* pl. 68. f. 9–11.
Terebratula Zelandica, *Deshayes*, 1830, *Mag. Zool.* 1841, t. 42.
Sow. Thes. Conch. vii. p. 361. t. 72. f. 111–113.
Terebratella Zelandica, *Davidson, Ann. Nat. Hist.* 1852, p. 367.
Hab. Cook's Straits, New Zealand, in 15 fathoms.

9. TEREBRATELLA TRANSVERSA.

Shell transversely ovate, thin, smooth, slightly wrinkled by lines of growth, pale horn-colour; margins flexuous; dorsal valve deeply depressed in the centre in front; ventral valve with an obtuse beak, perforated by a large, incomplete foramen; area wide and flattened; deltidia small, distant; loop elongated, doubly attached. Lon. 14, lat. 17 lines.

Terebratula transversa, *G. Sowerby, Thes. Conch.* vii. p. 361. t. 72. f. 114, 115.
Terebratella transversa, *Dav. Ann. Nat. Hist.* 1852, p. 368.
Hab. —— ? (Cab. Mr. Norris.)

10. TEREBRATELLA RUBELLA.

Shell oval, pointed at the beak and truncated in front, smooth, red-yellow, with diverging rays of bright red; dorsal valve with a slight central depression in front; beak recurved; hinge-area narrow; foramen small; deltidia large, united; loop elongated, doubly attached. Lon. 10, lat. 8, alt. 5 lines.

Terebratula rubella, *G. Sowerby*, 1846, *Thes. Conch.* vii. p. 350. pl. 69. f. 10–12.
Terebratella rubella, *Dav. Ann. Nat. Hist.* 1852.
Hab. Japan. (Mus. Norris, Cuming.)

11. TEREBRATELLA SANGUINEA.

Shell suborbicular, slightly notched in front, pale yellowish, with bright red, spotted rays; margins slightly sinuated in front; dorsal valve rather depressed in front; beak short, rather pointed, with well-defined lateral ridges; perforation moderate, complete; deltidia rather large, united; area broad and well defined; loop elongated, doubly attached. Lon. 5, lat. 5½, alt. 2 lines.

Anomia sanguinea, *Chemnitz, Conch. Cab.* viii. p. 96. t. 78. f. 706.
Dillwyn, R. S. p. 293, 1817.
Anomia sanguinolenta, *Gmelin, S. N.* p. 3347.
Terebratula sanguinea, *Sow. Thes. Conch.* vii. p. 357. t. 71. f. 71, 73.
Anomia cruenta, *Solander MS. in Mus. Banks.*
Terebratula cruenta, *Donovan, Nat. Repos.* t. 56. f. 1.
Terebratula erythroleuca, *Quoy & Gaim. Voy. Astrol.* iii. p. 557. t. 85. f. 8, 9.
Desh. in Lamk. Hist. ed. 2. vii. p. 350.
Terebratella sanguinea, *Dav. Ann. Nat. Hist.* 1852, p. 368.
Hab. Philippines, attached to coral.

12. TEREBRATELLA FRONTALIS.

"*Shell* suborbicular, rather solid, calcareous, rough, with irregular lines of growth and tessellated with microscopic dots, dirty yellowish; valves equally convex; marginal line straightish, entire; *ventral* valve produced posteriorly, slightly recurved, widely truncated by a large foramen, cardinal area narrow; *dorsal* valve suborbicular or transversely oval, without any median furrow; loop elongated, doubly attached."

Terebratula frontalis, *Middendorff*, 1849, *Malac. Rossica*, ii. p. 518 (*Mém. Acad. Petersb. Sc. Nat.* vi.).
Hab. S. coasts of Sea of Ochotsk.

13. TEREBRATELLA LABRADORENSIS. B.M.

Shell ovate, produced at the beak, whitish, with obscure radiating ribs; dorsal valve nearly orbicular, flattish; ventral valve with a prominent beak, perforated by a large, entire foramen; deltidium rather large; loop elongated, doubly attached. Lon. 7, lat. 6, alt. lines.

Terebratula Labradorensis, *G. Sowerby, Thes. Conch.* vii. p. 362. t. 71. f. 89, 90.

Terebratella Labradorensis, *Dav. Ann. Nat. Hist.* 1852, p. 368.

Hab. Labrador (Goodsir).

14. TEREBRATELLA SPITZBERGENSIS.

Shell small, oval, elongated, smooth, pale horn-colour; valves almost equally convex, margins even; dorsal valve slightly depressed in front; beak produced, recurved, obscurely keeled; foramen moderate, incomplete; deltidium of two distinct elongated plates; loop elongated, reflected, attached near the extremity of the prominent central septum. Lon. 4, lat. 3, alt. 2 lines.

Terebratella Spitzbergensis, *Davidson*, 1852, *Proc. Zool. Soc.*

Hab. Spitzbergen. (Mus. Cuming.)

15. TEREBRATELLA PUSILLA.

Shell small, thin, nearly circular, depressed, smooth; area large; foramen large, incomplete; deltidia rudimentary. Lon. and lat. 2½, alt. 1 line.

Terebratula pusilla, *Philippi*, 1844, *Foss. Tert. Allem.* p. 17. pl. 2. f. 15.

Terebratella pusilla, *D'Orb. Prod.* iii. p. 134.

Fossil. *Miocene.* Cassel.

16. TEREBRATELLA SAYI. B.M.

Shell orbicular, depressed, ornamented with about eleven radiating plaits, crossed by a few conspicuous lines of growth near the margin; plaits strong, sometimes plicated near the edge; dorsal valve rather flat; ventral convex; beak scarcely prominent; area small and flat; foramen small, incomplete; deltidium rudimentary. Lon. 9, lat. 9, alt. 5 lines.

Terebratula Sayi, *Morton*, 1829, *Journ. Philad.* p. 76. pl. 3. f. 5, 6; 1834, *Syn. Cret. Group*, p. 71. pl. 3. f. 3, 4.

Terebratula plicata, *Say*, 1830, *Amer. Journ.* ii. p. 43.

Terebratella plicata, *D'Orb. Prod.* ii. p. 259.

Fossil. *Chalk.* New Jersey, U.S.

17. TEREBRATELLA VANUXEMIANA.

Shell suborbicular, ornamented with unequal radiating ribs; each valve with a central furrow, bordered by more prominent ribs; beak not prominent; area widely triangular; foramen large; deltidium incomplete. Lon. 8, lat. 7, alt. 4 lines.

Terebratula Vanuxemiana, *Forbes*, 1844, *Proc. Geol. Soc.* p. 308 (figured).

Terebratella Vanuxemiana, *D'Orb. Prod.* ii. p. 259.

Fossil. *Chalk*. New Jersey, U.S.

18. ?TEREBRATELLA PARISIENSIS.

Shell small, round, very inequivalve, ornamented with broad, keeled, dichotomising ribs.

Terebratella Parisiensis, *D'Orbigny*, 1850, *Prod.* ii. p. 259.

Fossil. *Chalk*. France.

19. TEREBRATELLA SPATHULATA. B.M.

Shell smooth, with concentric lines of growth; *ventral* valve semicircular, strongly curved, truncated at the hinge-line, toothed at the angles; *dorsal* valve nearly flat, smooth, oblong, rounded in front; hinge-line straight, as wide as the shell; dental sockets at the angles of the hinge-line; cardinal process obtuse; hinge-plate broad, divided into four concave spaces; median septum narrow; loop (indicated at the hinge and septum) doubly attached. Lon. 10–15, lat. 10–12, alt. 8–10 lines.

Anomites spathulatus, *Wahlenberg*, 1821, *Act. Ups.* viii. p. 62. t. 4. f. 10, 11.

Terebratula spathulata, *Nilsson, Petr. Suec.* p. 35. t. 3. f. 15. *Bronn, Index*, p. 1251.

Rhynchora spathulata, *Dalman*, 1828, *Vet. Akad.* p. 136. *Hisinger, Leth. Suecica*, t. 20.

Fossil. *Chalk*. Sweden; Belgium.

20. TEREBRATELLA DAVIDSONIANA. B.M.

Shell wedge-shaped, semicircular, truncated at the hinge-line; surface ornamented with lines of growth and radiated with prominent punctations; *dorsal valve* flat, with a narrow mesial fold; hinge-line straight, bordered by a plate with four cavities (for the pedicel-muscle) and with a small dental pit at each angle; a single prominent septum in the middle: *ventral valve* a simple bent plate, with a narrow mesial groove externally, a slight muscular ridge inside, and a tooth at each angle of the hinge-line. Lon. 4, lat. 6 lines.

Rhynchora Davidsoniana, *Koninck MS.*
? Rhynchora minima, *id.*
Fossil. *Chalk.* Ciply, Belgium.

21. TEREBRATELLA PECTITA.

Shell subcircular, or somewhat pentagonal, plicato-striated; striæ 30–60, increasing by intercalation; dorsal valve slightly convex, longitudinally depressed in the centre in front; hinge-line nearly as wide as the shell, almost straight; area distinct, flat, triangular; foramen moderate; deltidium double. Lon. 10, lat. 9, alt. 6 lines.

Terebratula pectita, *Sow. Min. Con.* 1818, ii. p. 87. t. 138. f. 1.
Lam. An. sans Vert. vi. p. 255. no. 46; ed. 2. vii. p. 343.
Brongn. Env. Paris, pl. 9. f. 3.
Defr. Dict. Sc. Nat. liii. p. 159.
Buch, Mém. Soc. Géol. Fr. iii. p. 168. pl. 16. f. 12.
Rœmer, Kreid. p. 40.
Terebratula pectinata, *Smith, Strata identified,* 1816, f. 4.
Terebratella pectita, *D'Orb. Ter. Crét.* iv. p. 120. t. 517. f. 16–20.
Dav. Mon. Cret. p. 26. pl. 3. f. 29–33.
Fossil. *U. Greensand.* England; France.

22. TEREBRATELLA VERNEUILLIANA. B.M.

Shell circular, ornamented with about 15 unequal, sharp, radiating plaits; valves nearly equally convex; beak scarcely curved; area short, wide and flat; foramen large, circular; deltidium complete, double. Lon. 6, lat. 6½, alt. 3 lines.

Terebratella Verneuilliana, *Davidson,* April 1852, *Ann. Nat. Hist.* pl. 14. f. 4.
Fossil. *Greensand.* Santander.

23. TEREBRATELLA CANALICULATA. B.M.

Shell ovoid, ornamented with 12–14 radiating and bifurcating plaits; dorsal valve semicircular, convex; ventral valve produced into a long straight beak, truncated by a large foramen; area large and flat; deltidium elongated; loop reflected and doubly attached. Lon. 5, lat. 4, alt. 2½ lines.

Terebratula canaliculata, *Rœmer,* 1840, *Kreid.* p. 41. no. 30. pl. 7. f. 1.
D'Archiac, Mém. Soc. Géol. Fr. 2nd ser. ii. p. 331. pl. 21. f. 15.
Terebratella canaliculata, *D'Orb. Prod.* ii. p. 173.
Terebrirostra canaliculata, *D'Orb. Prod.* ii. p. 173.
Fossil. *U. Greensand.* Westphalia; Belgium.

24. Terebratella Carantonensis.

Shell orbicular, depressed, ribbed; ribs fine (about 58), radiating, dichotomous; ventral valve with a slight dorsal furrow; area wide, foramen minute. Lon. 14, lat. 14, alt. 6 lines.

Terebratella Carantonensis, *D'Orb.* 1847, *Ter. Crét.* iv. p. 122. t. 518. f. 1–4.

Fossil. *U. Greensand.* France.

25. Terebratella Moreana.

Shell transversely ovate, depressed, radiately ribbed; ribs 10, wide, nearly simple, angular; ventral valve convex, with a deep central furrow; area wide, foramen small, deltidium large, double: dorsal valve rather flat. Lon. 6, lat. 6, alt. 3 lines.

Terebratella Moreana, *D'Orb.* 1847, *Ter. Crét.* iv. p. 117. t. 516. f. 13–19.

Fossil. *Gault.* France.

26. Terebratella Menardi. B.M.

Shell subcircular, trilobed, truncated or obtusely angular at the beak; valves ornamented with sharp, bifurcating plaits, about 6 or 7 on the mesial fold and 6–12 on each side, decussated by close imbricating lines of growth; area triangular, well defined; foramen large; deltidium small, indented; cardinal fulcrum prominent. Lon. 6¼, lat. 7, alt. 4 lines.

Terebratula Menardi, *Valenciennes*, 1819, *in Lam. An. sans Vert.* vi. p. 256. no. 50.
Defr. Dict. Sc. Nat. liii. p. 160.
Buch, Mém. Soc. Géol. Fr. iii. pl. 17. f. 6.
Morris, 1846, *Journ. Geol. Soc.* p. 384. f. 2.
Dav. Ann. Nat. Hist. June 1850, pl. 14. f. 50.

Terebratella Menardi, *D'Orb. Ter. Crét.* iv. t. 517. f. 1–15.
Dav. Mon. Cret. p. 24. pl. 3. f. 34–42.

Terebratula truncata, *Sow.* 1829, *Min. Con.* vi. p. 71. t. 537. f. 3 (not *Lam.*).
Forbes, Journ. Geol. Soc. 1845, p. 346.
Austen, Journ. Geol. Soc. vi. p. 454.

Terebratella Astieriana, *D'Orb.* 1847, *Ter. Crét.* iv. p. 116. pl. 516. f. 6–12.

Fossil. *U. Greensand*; *Neocomian.* England; France.

27. Terebratella Neocomiensis.

Shell orbicular, depressed, radiately ribbed; ribs wide, oblique, dichotomous; valves nearly equal; beak small, curved, laterally

keeled; foramen small, complete; deltidium double. Lon. 11, lat. 10, alt. 4 lines.

Terebratella neocomiensis, *D'Orb. Ter. Crét.* iv. p. 115. t. 516. f. 1–5.

Fossil. *Neocomian.* France.

28. TEREBRATELLA PECTUNCULOIDES. B.M.

Shell suborbicular, with seven broad and sharp radiating plaits; surface ornamented with lines more acutely angulated than the lines of growth, which are regular and distinct, especially near the margin; margins deeply dentated; beak short, truncated by a large round foramen; deltidium incomplete; area sharply bordered; loop elongated, doubly attached. Lon. 8, lat. 8, alt. 5 lines.

Terebratulites pectunculoides, *Schlotheim*, 1820, *Petr.* p. 271.
Terebratula pectunculoides, *Buch, Mém. Soc. Géol. Fr.* iii. p. 179. pl. 17. f. 1.
Quenst. Handb. p. 464. pl. 37. f. 24, 25.
Terebratula tegulata, *Schl. Petr.* p. 269.
Zieten, Verst. Würt. p. 58. pl. 43. f. 4.
Terebratula plicata, *Bors.* 1825, *Mem. Tor.* xxix. p. 299. t. 1. f. 17 (not *Lam.*).

Fossil. *Coral Rag.* Germany.

29. TEREBRATELLA LORICATA. B.M.

Shell trilobed, radiately plaited; plaits numerous, unequal, fasciculated, imbricated by numerous lines of growth; mesial lobe prominent; hinge-line as wide as the shell; beak moderately prominent, truncated by a large foramen; area flat, sharply bordered; deltidium incomplete. Lon. 5, lat. 5, alt. 3 lines.

Terebratulites loricatus, *Schlotheim*, 1820, *Petr.* p. 270.
Terebratula loricata, *Buch, Mém. Soc. Géol. Fr.* p. 183. pl. 17. f. 5.
Quenst. Handb. p. 464. pl. 37. f. 19.
Terebratula truncata, *Zieten, Verst. Würt.* p. 58. pl. 43. f. 6 (not *Sow.*).

Fossil. *Coral Rag.* Germany.

30. TEREBRATELLA SUBPENTAGONA.

Shell subquadrate, ornamented with 10–11 radiating plaits; dorsal valve flattened, slightly depressed in front; front truncated; hinge-line wide and rather straight; beak short and wide; area flat; foramen small; deltidium double, complete. Lon. 7½, lat. 6, alt. 4 lines.

Terebratella subpentagona, *Koch*, 1837, *Beitr. zur Kenn. Ool.* p. 21. pl. 1. f. 8.
D'Orb. Prod. i. p. 221.
Fossil. *Lower Lias.* Germany.

5. TRIGONOSEMUS.

Shell plaited, beak produced, curved, with a narrow apical foramen; area large, triangular, flat, marked by the outline of the flat deltidium; cardinal process very prominent.

Trigonosemus (elegans), *König*, 1822, *Icones Foss.* p. 3. f. 73.
Davidson, 1852, *Mon. Cret.* p. 28.
Delthyridæa (pectiniformis), *M'Coy*, 1845, *Griffith's Irish Carb. Fossils* (unpublished).
Fissurirostra (recurva), *D'Orb. Ter. Crét.* iv. p. 133. t. 520; *Ann. Sc. Nat.* 1848.
Fissirostra, *D'Orb.* 1849, *Cours Elem. Palæont.* p. 89.

1. TRIGONOSEMUS ELEGANS. B.M.

Shell oval, striato-costate; striæ 30–40, often intercalated; dorsal valve slightly convex, longitudinally depressed in front; beak much produced, rather recurved; area very large, triangular, nearly flat; foramen small and narrow, apical; loop elongated, reflected, doubly attached; cardinal process very prominent. Lon. 11, lat. 9, alt. 5 lines.

Trigonosemus elegans, *König*, 1825, *Icones Foss.* p. 3. pl. 6. f. 73.
Davidson, *Mon. Cret.* p. 29. pl. 4. f. 1–4.
Terebratula elegans, *Defr.* 1828, *Dict. Sc. Nat.* liii. p. 157.
Terebratula recurva, *id.* p. 161.
Fissurirostra recurva, elegans, et pectita, *D'Orb.* 1847, *Ter. Crét.* iv. p. 133–136. t. 520.

Fossil. *Chalk.* England (Norwich); Belgium (Ciply); France.

2. TRIGONOSEMUS PECTINIFORMIS. B.M.

Shell trapezoidal, depressed, radiately ribbed; ribs straight, dichotomous; *ventral* valve elevated in the middle, depressed at the sides; beak recurved; area nearly as wide as the shell, deep, sharply margined; deltidium triangular, flat; foramen minute, apical; *dorsal* valve triangular, depressed in the centre; cardinal process prominent; loop elongated, reflected, doubly attached. Lon. 6, lat. 6, alt. 3 lines.

Terebratulites pectiniformis, *Schlotheim*, 1813, *Taschb.* vii. p. 113.

Terebratula pectiniformis, *Buch, Ter.* p. 65. t. 3. f. 31.
Bronn, Leth. p. 652. t. 30. f. 5.
Rœmer, Kreid. p. 41.
Quenst. Handb. p. 463. t. 37. f. 14 (not 12, 13).
Terebratula Hilseana, *Rœmer, Ool.* ii. p. 20. t. 18. f. 9; *Kr.* p. 41.
Fossil. *U. Chalk.* Maestricht.

3. TRIGONOSEMUS PALISSII. B.M.

Shell orbicular, depressed, radiately plaited; plaits numerous, intercalating; margins crenulated; dorsal valve slightly concave, sinuated in front; hinge-line curved, narrower than the shell; cardinal process prominent; loop doubly attached; ventral valve convex; beak prominent, curved, with a minute apical foramen; hinge-area large, triangular, concave, sharply bordered; deltidium large, triangular, flat. Lon. 7½, lat. 7, alt. 3 lines.

Terebratella Palissii, *Woodward*, 1852, *Mus. Brit.*
Trigonosemus pulchellus (not *Nilsson*), *Dav. Ann. Nat. Hist.* June 1850, pl. 15. f. 4 (incorrect).
Terebratula pulchella (part.), *Quenst. Handb.* t. 37. f. 12, 13?
Fossil. *Upper Chalk.* Ciply, Belgium.

4. TRIGONOSEMUS PULCHELLUS. B.M.

Shell suborbicular, depressed, radiately plaited; plaits intercalating; *dorsal* valve slightly concave, truncated at the hinge-line; *ventral* valve convex, with a prominent, incurved and sharp-edged beak; hinge-area large, triangular, concave; foramen apical, minute; deltidium large, triangular, flat; loop elongated, reflected, attached to a septum which reaches the opposite valve. Lon. 7, lat. 6, alt. 2 lines.

Terebratula pulchella, *Nilsson*, 1827, *Petref. Sues.* p. 36. pl. 3. f. 14.
Rœmer, Kreid. p. 41.
Dalman, Vet. Akad. p. 138.
Fossil. *Upper Chalk.* Sweden.

5. TRIGONOSEMUS INCERTUS.

Shell elongated, oval, striated; valves almost equally convex; beak produced, rounded, moderately recurved; area triangular, nearly flat, short; foramen small, oval; deltidium bordering a small portion of the foramen; striæ about 34, frequently intercalated, and decussated by numerous, fine, concentric lines of growth. Lon. 4½, lat. 4, alt. 2¼ lines.

Trigonosemus incertus, *Davidson, Mon. Cret.* p. 31. pl. 4. f. 5.
Fossil. *Lower Chalk* (*Craie chloritée*). Chard, Somerset.

6. MAGAS.

Shell with a reflected loop attached near the bend to a very prominent central septum (figs. 9–12).

Magas, *Sowerby*, 1816, *Min. Con.* ii. p. 39. t. 119.
Dav. 1852, *Mon. Cret.* p. 19; *Ann. Nat. Hist.* 1852, p. 371.
D'Orb. Ter. Crét. 1847, iv. p. 54.
Terebratulæ spiriferinæ (part.), *Quenst. Handb.* p. 476.
Terebratula, E. 1, *Blainv. Man. Malac.* p. 512.

Figs. 9 & 10. *Magas pumila.*

Fig. 9.

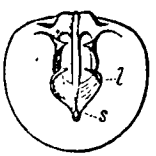


Fig. 10.

Fig. 9.—Interior of dorsal valve.
Fig. 10.—Section of both valves: *s.* septum; *l.* loop; *o.* oral processes.

Figs. 11 & 12. *Magas Evansii.*

Fig. 11.

Fig. 12.

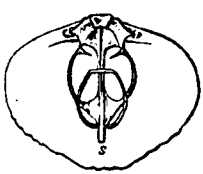


Fig. 11.—Section of dorsal valve.

Fig. 12.—Front view of interior.

In *M. pumila* the reflected portions of the loop are not united, and the deltidium consists of two narrow plates bordering the angular foramen.

1. MAGAS CRENULATA.

Shell suborbicular, pale horn-colour, with radiating ribs; margins crenulated; beak short, slightly reflected; hinge-area large and flattened; foramen large, nearly complete; deltidia large,

separate; dorsal valve depressed in the centre; loop elongated, doubly attached; central septum more or less elevated, sometimes touching the opposite valve. Lon. 7, lat. 7, alt. 4 lines.

Terebratula crenulata, *G. Sowerby, Thes. Conch.* vii. p. 358. t. 71. f. 96, 97, 98.
Terebratella crenulata, *Dav. Ann. Nat. Hist.* 1852, p. 368.
Hab. Santa Cruz.

2. MAGAS EVANSII.

Shell subovate, with a few unequal, bifurcating ribs, pale red; beak tapering, slightly recurved, with well-defined lateral ridges; foramen incomplete; deltidia small; area flattened; dorsal valve rather flat; loop elongated, doubly attached; septum produced, nearly touching the opposite valve. Lon. 4, lat. 3½, alt. 1½ lines (figs. 11, 12).

Terebratella Evansii, *Davidson*, 1852, *Ann. Nat. Hist.* p. 368; *Proc. Zool. Soc.* p. . pl. . f. 7–9.
Hab. New Zealand. (Mus. Cuming.)

3. MAGAS CUMINGII.

Shell oval, thick, smooth, white, slightly tinged with red; beak produced, tapering, slightly curved, grooved to the summit; area triangular, concave; deltidium obsolete; dorsal valve with a prominent muscular fulcrum; loop doubly attached; septum elevated, reaching the ventral valve. Lon. 5, lat. 4, alt. 2½ lines.

Terebratella Cumingii, *Davidson*, 1852, *Ann. Nat. Hist.* p. 368; *Proc. Zool. Soc.* p. . pl. . f. 10–16.
Hab. New Zealand. (Mus. Cuming.)

4. MAGAS PUMILA. B.M.

Shell oval, smooth, ornamented with radiating coloured bands; dorsal valve nearly flat, or slightly concave; ventral valve deep, with a well-defined hinge-area; beak recurved; foramen minute; deltidium rudimentary. Lon. 4, lat. 3, alt. lines (figs. 9, 10).

Magas pumila, *Sowerby*, 1818, *Min. Con.* ii. p. 40. t. 119. f. 1–5.
Park. Org. Rem. p. 227. pl. 7. f. 14.
Bronyn. Env. Paris, pl. 4. f. 9.
Defr. Dict. Sc. Nat. xxviii. p. 13. f. 1.
Bronn, Leth. Geog. p. 662. pl. 30. f. 1.
D'Orb. in Murch. Russia, ii. p. 495. pl. 43. f. 27–30; *Ter. Crét.* iv. p. 54. pl. 501.
Bouchard & Dav. Bull. Soc. Géol. France, v. 2nd ser. p. 139. pl. 2. f. 1–11.

Magas pumila, *Sow. Thes.* vii. p. 62. pl. 1. f. 7–9.
Dav. Ann. Nat. Hist. v. pl. 15. f. 2, 1850.
Quenst. Handb. p. 476. t. 38. f. 15.
Magas truncata, *Rose, in Woodw. Geol. Norf.* t. 6. f. 9.
Magas magna et punctata, *Woodw. Synopt. Table,* p. 22.
Terebratula concava, *Lamarck,* 1819, *An. sans Vert.* vi. p. 251. no. 26.
Dav. Ann. Nat. Hist. v. June 1850.
Desh. Lam. ed. 2. vii. no. 26.
Terebratula (G.) magas, *Blainv. Man. Mdlac.* p. 512. t. 54. f. 1, 1825.
Terebratula pumila, *Buch, Mém. Soc. Géol. France,* iii. 1st ser. p. 216. pl. 19. f. 5.
Fossil. *Chalk.* England; Belgium; France; Russia.

5. MAGAS ORTHIFORMIS.

Shell semicircular, wedge-shaped, depressed, ornamented with obscure, unequal radiating plaits, crossed by distinct lines of growth; hinge-line straight, nearly as wide as the shell; dorsal valve flat; ventral valve convex, truncated at the beak; area flat; foramen a wide, angular notch, bored by the deltidia. Lon. 4, lat. 4½, alt. 3 lines.

Terebratula orthiformis, *D'Archiac,* 1847, *Mém. Soc. Géol. Fr.* 2 ser. p. 333. pl. 22. f. 4.
Terebratella orthiformis, *D'Orb. Prod.* ii. p. 173.
Orthis millepunctata, *Koninck.*
Magas orthiformis, *Dav. Monogr. Cret. Brach.* p. 22.
Fossil. *U. Greensand.* Belgium.

7. BOUCHARDIA.

Shell with a minute foramen at the apex of the beak; deltidium solid; apophysis anchor-shaped, the central septum being furnished with two short lamellæ.

Terebratula, § E, *Blainv. D. S. N.* liii. 145, 1828.
Bouchardia (rosea), *Davidson, Bull. Soc. Géol. France,* 1849; *Ann. Nat. Hist.* 1852, p. 372.
King, Permian Fossils, p. 81, 1850.

Bouchardia tulipa.

Fig. 13. Fig. 14.

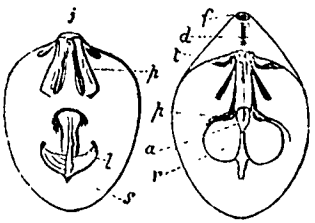


Fig. 13.—Interior of dorsal valve: *j.* cardinal process; *p.* hinge-plate; *l.* loop; *s.* septum.

Fig. 14.—Interior of ventral valve: *f.* foramen; *t.* teeth; *a,* adductor scar; *p.* peduncle scars; *r.* retractor scars.

The great muscular impressions in *Producta,* which correspond to these retractor scars, have been mistaken for points of attachment of the peduncle.

1. BOUCHARDIA TULIPA. B.M.

Shell oblong-oval, rather depressed, thick, smooth, pale rose-red, with darker rays; margins even; beak rather produced, straight; perforation very small, entire; hinge-area rather wide; deltidia united; dorsal valve oval, flattish; cardinal fulcrum (figs. 13, 14).

Terebratula tulipa, *Blainv. Dict. Sci. Nat.* liii. 144, 1828.
Terebratula rosea, *Mawe, Introd. Conch.* t. . f. .
Sow. Gen. f. 4; *Thes. Conch.* vii. p. 357. t. 71. f. 74–77.
Desh. in Lamk. Hist. ed. 2. vii. p. 350.
King, Ann. & Mag. N. H. xviii. 34. 38. 1846.
Pachyrhynchus roseus, *King, Permian Fossils,* p. 70.
Bouchardia rosea, *Davidson, Bull. Soc. Géol. France,* 1849, pl. 1. f. 1–6.
King, Permian Fossils, p. 81.
Hab. Brazil (Rio, 13 fathoms, J. M'Gillivray).

7*. WALTONIA?

Shell oval, smooth, punctate; valves convex; margins sinuated; beak truncated by a large, incomplete foramen; deltidia separate; loop reduced to two simple lamellæ, furnished with oral processes, and attached to a prominent central septum.

Waltonia (Valenciennii), *Dav.* 1850, *Ann. Nat. Hist.* v. p. 475; 1852, p. 372.

Waltonia differs from *Terebratella* in wanting the reflected portion of the loop; it may, possibly, have been broken away; only one minute specimen is known.

1. WALTONIA VALENCIENNII.

Shell small, oval, red, smooth, with the margin fimbriated, the plaits radiating in front, diverging at the sides; dorsal valve nearly flat; ventral valve convex; beak prominent; foramen large and incomplete; deltidia disunited. Lon. 2½, lat. 2, alt. 1 line.

Waltonia Valenciennii, *Davidson*, 1850, *Ann. Nat. Hist.* pl. 15. f. 1; 1852, p. 370.
Hab. New Zealand (Mus. Paris).

8. MEGERLIA.

Shell transversely oblong, with a wide and rather straight hinge-line; area distinct; foramen incomplete; loop rather short, reflected, triply attached,—once to the hinge-plate, and twice to the septum, by processes from the crura and also from the reflected portion of the loop (fig. 16).

Terebratula, § D, *Blainv. Dict. Sci. Nat.* liii. 145, 1828.
Megerlia (truncata), *King*, 1850, *Permian Fossils*, 81. 145.
Dav. 1852, *Ann. Nat. Hist.* p. 369.
Ismenia (pectunculus), *King, Perm. Foss.* 81. 142, 1850.
Orthis, sp., *Philippi, Moll. Sicil.*
Kingena (lima), *Davidson*, 1852, *Mon. Cret.* p. 41. f. 5, 6.
Terebratulæ expansæ, *Morris*, 1846, *Journ. Geol. Soc.* p. 385.
Terebratulæ annuliferæ (part.), *Quenst. Handb.* p. 462.

Megerlia truncata.

Fig. 15.

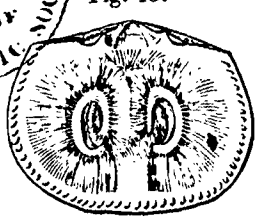


Fig. 16.

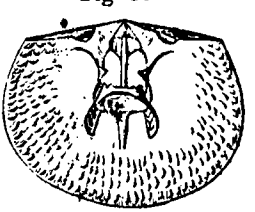


Fig. 15.—Interior of dorsal valve with the animal.
Fig. 16.—Ditto, showing the loop.

The *Megerliæ* often resemble *Argiope* in shape, and in having corresponding ribs; the denticulation of the internal margin of the valves in some species may be compared with the larger marginal processes of the latter genus.

* *Loop doubly attached.* Megerlia.

1. MEGERLIA TRUNCATA. B.M.

Shell transversely oblong, or suborbicular, with a long straight hinge-line, horn-coloured, with very fine radiating striæ; beak truncated; hinge-area flat and wide; foramen large, incomplete; deltidia minute, separate; dorsal valve nearly flat, slightly depressed in front; interior of both valves spinulose; loop short, doubly attached, and giving off from its reflected portion two additional processes to the central septum. Lon. 6, lat. 9 lines (figs. 15, 16).

List. Conch. t. 462. f. 23.
Anomia truncata, *Linn. S. N.* 1152.
Born, Mus. 118. t. 6. f. 14.
Chemnitz, Conch. Cab. viii. 90. t. 77. f. 701.
Gmelin, S. N. 3343.
Dillw. R. S. i. p. 292.
Poli, Test. Sicil. p. 191. t. 30. f. 16, 17.
Pallas, Misc. Zool. t.
Terebratula, *Lamk. E. M.* t. 243. f. 2.
Terebratula truncata, *Retz. Nov. Gen.* p. 14.
Lamk. Hist. vi. p. 247; ed. 2. vii. p. 333.
Sow. Thes. Conch. vii. p. 354. t. 71. f. 64–67.
De Buch, Mem. p. 66.
Blainv. D. S. N. liii. p. 139.
Philippi, Moll. Sicil. i. p. 95. t. 6. f. 12.
Quenst. Handb. p. 462. t. 37. f. 10.
Terebratella truncata, *D'Orb. Ann. Sci. Nat.* 1848, viii. p. 66. t. 7. f. 11, 12, 16, 37.
Terebratula monstrosa, *Scacchi, Oss. Zool.* ii. p. 1.
Anomia disculus, *Pallas, Misc. Zool.* p. 184. t. 14. f. 1 (1766).
Terebratula (D.) disculus, *Blainv. D. S. N.* liii. p. 138.
Orthis truncata, *Philippi, Sicil.* ii. p. 69.
Megerlia truncata, *King*, 1850, *Permian Fossils*, 81. 145.
Dav. Ann. Nat. Hist. 1852, p. 369.
Terebratula oblita, *Michelotti, Brach.* p. 4.
Orthis oblita, *Mich. Faun. Mioc.* pl. 2. f. 21.

Megathyris oblita, *D'Orb.* 1852, *Prod.* iii. p. 134.
Hab. Mediterranean, on corals, at 60–105 fathoms.

Fossil. *Miocene.* Turin; Gibraltar; Malta.

Terebratula irregularis, *Blainv. D. S. N.* liii. 140=? Terebratula ostracea, *Blainv. D. S. N.* liii. 145, is perhaps a variety.

** *Loop trebly attached.* Ismenia.

2. MEGERLIA PULCHELLA.

Shell oval, pointed at the beak, smooth, whitish, with a few radiating red lines; margins rather flexuous; foramen large, incomplete; deltidia small, separate; area indistinct; dorsal valve flattened; loop small, trebly attached. Lon. 3, lat. 2, alt. 1 line.

Terebratula pulchella, *G. Sowerby, Thes. Conch.* vii. p. 360. pl. 71. f. 105–107.
Megerlia pulchella, *Dav. Ann. Nat. Hist.* 1852, p. 369.
Hab. Philippines; Cocos Island.

3. MEGERLIA PECTUNCULUS. B.M.

Shell pentagonal, with seven corresponding ribs to each valve; ribs unequal, projecting beyond the margin, four large and three intermediate smaller; both ribs and interspaces ornamented with regular squamose lines of growth; margins even; beak short, truncated by a large foramen; deltidium incomplete; loop small, trebly attached. Lon. 6, lat. 7, alt. 4 lines.

Terebratulites pectunculus, *Schlotheim*, 1820, p. 272.
Terebratula pectunculus, *Buch, Mém. Soc. Géol. Fr.* iii. p. 188. pl. 17. f. 1*.
Quenst. Handb. p. 466. t. 37. f. 23, 25.
Terebratella pectunculus, *D'Orb. Prod.* i. p. 377.
Ismenia pectunculus, *King, Permian Foss.* 81. 142.

Fossil. *Oxford Clay.* France.
Coral Rag. Bavaria; Wurtemburg.

4. MEGERLIA LIMA. B.M.

Shell orbicular or slightly pentagonal, smooth, or minutely granulated; dorsal valve nearly flat; ventral deeply convex; beak short, recurved; foramen moderate; deltidium rudimentary, concealed; loop rather long, attached to the median septum by crural processes and also by processes from the reflected and expanded termination. Lon. 9, lat. 6, alt. 5 lines.

Terebratula lima, *Defrance, Dict. Sc. Nat.* 1828, t. liii. p. 156. *D'Orb. Ter. Crét.* iv. p. 98. pl. 512. f. 1–5.
Terebratula pentangulata, *Woodward, Geol. Norf.* 1833, pl. 6. f. 10.
Terebratula ventro-plana, *Rœmer, Nordd. Ool.* p. 51. t. 2. f. 7.
Terebratula Hebertiana, *D'Orb.* 1847, *Ter. Crét.* pl. 514. f. 5, 11.
Terebratula spinulosa, *Morris,* 1847, *Ann. Nat. Hist.* xx. p. 253. pl. 18. f. 6.
Terebratula sex-radiata, *J. Sow.* 1850, *Dixon's Geol. Sussex,* p. 348. pl. 27. f. 10.
Kingena lima, *Davidson, Mon. Cret.* p. 42. pl. 4. f. 15–28; pl. 5. f. 1–4.
? Terebratula arenosa, Deshayesii, subconcava, et subarenosa, *D'Archiac,* 1847, *Mem. Soc. Géol. Fr.* ii. pt. 2.
Fossil. *Gault, Upper Greensand, Chalk.* England; France.

*** *Doubtful species.*

5. MEGERLIA? WACOENSIS.

Shell subpentagonal, ventricose, smooth; margins even, front straight; dorsal valve convex, with indications of a long internal septum; ventral valve gibbose; beak obtuse, recurved, laterally keeled; foramen small and round; deltidium distinct. Lon. 9, lat. 8, alt. 6½ lines.

Terebratula Wacoënsis, *Rœmer,* 1852, *Kreid. Texas,* p. 81. t. 6. f. 2.
Fossil. *Chalk.* Guadaloupe.

6. MEGERLIA? OVATA. B.M.

Shell oval or elongated, depressed; surface ornamented with minute, wavy, spinulose striæ; dorsal valve nearly flat, with a central depression in front, increasing with age; ventral valve convex; beak produced, nearly straight, lateral ridges distinct; foramen moderate, circular; deltidium small, complete. Lon. 19, lat. 13, alt. 11 lines (large specimen).

Terebratula ovata, *Sowerby,* 1812, *Min. Con.* i. p. 46. t. 15. f. 3. *Davidson, Mon. Cret.* p. 47. t. 4. f. 6–13 (not *Mantell, Geol. S. Downs,* 1822).
Terebratula lachrymosa, *D'Orb.* 1847, *Ter. Crét.* iv. p. 99. pl. 512. f. 6–11.
Terebratula Keyserlingi, *D'Arch.*
Fossil. *Upper Greensand.* England; France.

7. MEGERLIA? ARCUATA.

Shell oval, attenuated posteriorly, slightly truncated in front, ornamented with diverging spinulose striæ; dorsal valve gibbous at the umbo, depressed in front; beak pointed, foramen minute, deltidium elongated, triangular, double. Lon. 5, lat. 3½, alt. 3 lines.

Terebratula arcuata, *Rœmer*, 1840, *Nordd. Kreid.* p. 44. t. 7. f. 18.
Bronn, Index, p. 1229.

Fossil. *Neocomian* (*Hilsconglomerate*). Westphalia.

8. MEGERLIA? RUGULOSA. B.M.

Shell oblong, front margin truncated or slightly indented, surface minutely wrinkled; dorsal valve convex, sometimes depressed in front; ventral valve deep; beak rather produced, lateral ridges obscure; foramen large, circular; deltidium small; loop ——? Lon. 11, lat. 8, alt. 7 lines.

Terebratula rugulosa, *Morris & Davidson*, 1847, *Ann. Nat. Hist.* xx. p. 253. pl. 18. f. 5.
Dav. Mon. Cret. p. 49. pl. 4. f. 14.
Terebratula disparialis (part.), *D'Orb. Ter. Crét.* 1847, iv. p. 100. pl. 512. f. 12, 13 (not 16, 17, which represent *T. squamosa*).

Fossil. *U. Greensand*; *Chalk-marl*. England; France.

9. MEGERLIA? VERNEUILI.

Shell oval, elongated, depressed, ornamented with squamose lines of growth and diverging spinulose striæ; margins slightly flexuose in front; beak produced, nearly straight, truncated by a large circular foramen; deltidium elongated. Lon. 5, lat. 3, alt. 2 lines.

Terebratula Verneuili, *D'Arch.* 1847, *Mem. Geol. Soc. Fr.* ii. p. 326. pl. 20. f. 4.
D'Orb. Prod. ii. p. 172.

Fossil. *U. Greensand*. Belgium.

10. MEGERLIA? NANA. B.M.

Shell small, orbicular, depressed, smooth, with obscure radiating furrows, and numerous lines of growth near the margin; punctation conspicuous; dorsal valve flat, with a strong internal median plate; ventral valve convex; beak rounded, much recurved; foramen small; deltidium concealed*. Lon. 6, lat. 5½, alt. 3½ lines.

* Three species having been sent with this name, by Dr. Braun, the description is taken from the specimen to which the label was affixed.

Terebratula nana, *Münster*, *Bair.* p. 48.
Braun, *Bair.* p. 44.
Rœmer, *Nordd. Ool.* p. 52. t. 2. f. 20.
Bronn, *Index*, p. 1242.

Fossil. *Oxford Clay*. Bavaria.

11. MEGERLIA? DESLONGCHAMPSII.

Shell small, oval, rather depressed, covered with minute tubular asperities, between which the punctations are visible; margins even; front truncated; beak prominent; foramen moderate, incomplete; deltidia separate. Lon. 3½, lat. 3, alt. 1½ lines.

Terebratula Deslongchampsii, *Davidson*, June 1850, *Ann. Nat. Hist.* pl. 15. f. 6.

Fossil. *Lias*. Normandy.

12. MEGERLIA? HIPPOPUS. B.M.

Shell ovate or rounded, inflated, smooth; valves unequal, the ventral largest, ventricose, with a short recurved umbo; foramen small; deltidium triangular; dorsal valve convex, with a deep medio-longitudinal depression. Lon. 14, lat. 14, alt. 10 lines.

Terebratula hippopus, *Rœmer*, 1841, *Kreid.* p. 114. t. 16. f. 28.
D'Orb, *Ter. Crét.* iv. p. 85. t. 508. f. 12–18.
Geinitz, *Kreid.* p. 87.
Terebratula resupinata, *Pusch*, *Polens Pal.* p. 23. t. 4. f. 6 (not *Sow.*).

Fossil. *Neocomian*; *Chalk*. France; Belgium.

See also Terebratula irregularis, *Blainv. D. S. N.* liii. 140=Terebratula ostracea, *Blainv. D. S. N.* liii. 146.

9. MORRISIA.

Shell with a large foramen, encroaching equally on both valves; ventral valve with a small, straight area; loop not reflected, united to a small forked process in the centre of the valve; structure coarsely punctate (fig. 18).

Animal with sigmoid arms, destitute of spiral termination (fig. 17).

Morrisia (appressa), *Dav.* 1852, *Ann. Nat. Hist.* p. 371.
Orthis, sp., *Philippi*, 1844, *Moll. Sicil.* ii. p. 69.

Morrisia anomioides.

Fig. 17.

Fig. 18.

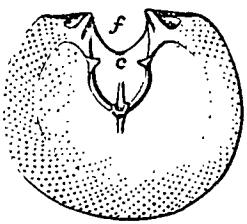


Fig. 17.—Interior of the dorsal valve with the animal: *o*. the orange-coloured ovaries.

Fig. 18.—Ditto showing the loop: *c*. oral processes; *f*. foramen.

1. MORRISIA ANOMIOIDES.

Shell minute, circular, depressed, smooth, olive-green, translucent; foramen large and round, encroaching equally on both valves; area of ventral valve chiefly occupied by the foramen; deltidia rudimentary; dorsal valve deeply notched at the umbo; loop consisting of two simple plates (*crura*) attached to the sides of the umbonal notch, and to a central, bifurcated process. Lon. 1, lat. 1¼, alt. ½ line (lat. 3 lines, *Forbes*) (figs. 17, 18).

Terebratula anomioides, *Scacchi.*
Philippi, Moll. Sicil. ii. p. 69. t. 18. f. 9, 1844.
Terebratula appressa, *Forbes*, 1844, *Brit. Assoc. Report on Egean Moll.* p. 167, 193 (read 1843).
Morrisia seminulum, *Dav. Ann. Nat. Hist.* 1852, p. 371 (not *Ter. seminulum*, Phil.).
Morrisia anomioides, *Dav.* 1852, *Proc. Zool. Soc.* p. . pl. . f. 29.
Hab. Mediterranean, at 95 fathoms.

2. MORRISIA LUNIFERA.

Shell minute, subcordate, compressed, front margin slightly indented; area moderate; internal skeleton consisting of a semilunar plate in the centre of the dorsal valve. Lon. and lat. 1½ line.

Terebratula lunifera, *Philippi*, 1836, *Moll. Sicil.* i. p. 97. t. 6. f. 16 (not *Sow.*).
Orthis lunifera, *Philippi, Moll. Sicil.* ii. p. 69.
Argiope Forbesii (syn.), *Dav. Ann. Nat. Hist.* May 1852, p. 373.
Hab. Mediterranean.

3. MORRISIA? EUSTICTA.

Shell small, orbicular, depressed, smooth, with a few obscure lines of growth, densely punctate and ornamented with radiating rows of minute points; dorsal valve convex, with an obtuse longitudinal ridge; beak not prominent; foramen large, incomplete; deltidium rudimentary. Lon. 5½, lat. 5 lines.

Terebratula eusticta, *Philippi*, 1836, *Moll. Sicil.* i. p. 98. t. 6. f. 9.
Orthis eusticta, *Phil.* 1844, *Moll. Sicil.* ii. p. 70.

Fossil. *Pliocene.* Palermo.

10. KRAUSSIA.

Shell subcircular, with a nearly straight hinge-line; beak truncated; foramen large and round; deltidia small, disunited; beak laterally keeled; hinge-area flat; dorsal valve longitudinally depressed; internal skeleton consisting of a small forked process arising from the septum, near the centre of the valve (fig. 19).

Kraussia (rubra), *Davidson*, 1852, *Ann. Nat. Hist.* p. 369.
Terebratulæ annuliferæ (part.), *Quenst. Handb.* p. 463.

Fig. 19. *Kraussia rubra.*

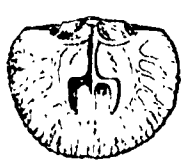


Fig. 20. *K. Lamarckiana.*

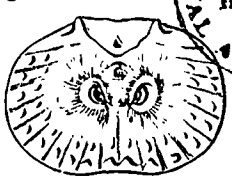


Fig. 19.—Interior of dorsal valve, showing the forked apophysis in the centre, and the branching pallial vessels on each side.
Fig. 20.—Interior of dorsal valve with the animal, from a dry specimen in the British Museum.

The brachial apparatus of *Kraussia Lamarckiana* (fig. 20) is like that of *Terebratula* and *Terebratella*, but the arms are unusually small in the species examined, and their fringes do not extend more than half way towards the border of the shell; they are supported solely by the small forked process above described, no other part of the apophysary system being calcified.

1. KRAUSSIA RUBRA. B.M.

Shell suborbicular, ornamented with numerous, radiating ribs, sometimes bifurcating, or augmenting by intercalation; colour pale, with red rays and bands of growth; *dorsal valve* (see fig. 19) slightly depressed in the centre, in front, furnished internally with

a forked central process, expanded at the extremities; *ventral valve* deep, simple; hinge-area flat, encroached upon by the large irregular foramen; deltidium small, incomplete. Lon. 11, lat. 13, alt. 6 lines (fig. 19).

Anomia rubra, *Pallas*, 1766, *Misc. Zool.* t. 14. f. 2, 11.
Anomia striata P. B. Spes, *Chemnitz*, 1785, viii. p. 94. t. 77. f. 703.
Anomia capensis, *Gmelin*, 1788, *S. N.* p. 3347.
Dillw. R. S. i. p. 292.
Terebratula rubra, *Blainv. D. S. N.* liii. p. 138, 1828.
Sow. Thes. Conch. vii. t. 68. f. 10 (not 9 & 11).
Terebratula capensis, *Krauss, Sudafr. Moll.* p. 32. t. 2. f. 10 (not *Adams*).
Kraussia rubra, *Davidson, Ann. Nat. Hist.* 1852, p. 370.
Hab. S. Africa.

2. KRAUSSIA COGNATA. B.M.

Shell trapezoidal, rounded in front, pale horn-colour, with obscure radiating striæ; beak obtuse, reflected; hinge-area small; perforation large, incomplete; deltidia small, triangular; dorsal valve flattish, with a longitudinal central depression; apophysis central, forked. Lon. 10, lat. 9, alt. 4 lines.

Cognata Anomia craniolaris, *Chemn. C. C.* viii. p. 78. t. 76. f. 688.
Anomia craniolaris, var., *Dillw. R. S.* i. p. 285.
Terebratula cognata, *G. Sowerby, Thes. Conch.* vii. p. 346. t. 68. f. 12, 13, 14.
Sow. Ann. Nat. Hist. 1847, p. 464.
Krauss, Sudafr. Moll. p. 33.
Kraussia cognata, *Davidson, Ann. Nat. Hist.* 1852, p. 370.
Hab. S. Africa.

3. KRAUSSIA PISUM. B.M.

Shell transversely ovate, trilobed, with obscure radiating ribs, slightly reddish; margins minutely crenulated, deeply sinuated in front; beak slightly produced, obtuse; foramen large, incomplete; deltidia small; hinge-area small; dorsal valve with a rather straight hinge-line and a deep central longitudinal furrow; apophysis central, forked. Lon. 4½, lat. 5, alt. 3 lines.

Terebratula pisum, *Valenciennes, in Lamarck, Hist.* 1819, ed. 2. vii. p. 330.
G. B. Sow. Thes. Conch. vii. p. 345. t. 69. f. 37, 38, 39.
Kraussia pisum, *Dav. Ann. Nat. Hist.* 1852, p. 370.
Terebratula Natalensis, *Krauss, Sudafr. Moll.* p. 33. t. 2. f. 11.
Küster, Neue Conch. vii. p. 1. t. 2. f. 4–7.
Quenst. Handb. p. 463. t. 37. f. 11.
Hab. S. Africa (not Sydney).

4. KRAUSSIA ALGOENSIS. B.M.

"Shell suborbicular, slightly acuminated behind, rather lobed in front, whitish, radiately striated; mesial ridge distinct, roundish; perforation large, incomplete; margin very minutely crenulated." Lon. 5½, lat. 5 lines.

Terebratula Algoënsis, *G. Sowerby, Thes. Conch.* vii. p. 362. t. 91. f. 91, 92.
Dav. Ann. Nat. Hist. 1852.
Hab. Algoa Bay (Bowerbank).

(Founded on a single ventral valve, which is scarcely different from *T. pisum.*)

5. KRAUSSIA LAMARCKIANA. B.M.

Shell suborbicular, striated with fine, bifurcating ridges, light yellow; hinge-area well-defined, flat; foramen large, incomplete; deltidia small; dorsal valve with central longitudinal groove; apophysis central, bifurcating; margins of the valves thickened internally and spinulose. Lon. 3, lat. 3, alt. 1¼ lines (fig. 20).

Terebratella Lamarckiana, *Davidson*, 1852, *Ann. Nat. Hist.* p. 370; *Proc. Zool. Soc.* p. . pl. . f. 22, 23.
Hab. Sydney, Australia; New Zealand.

6. KRAUSSIA DESHAYESII.

Shell suborbicular, radiately ribbed, reddish brown, with six red rays; beak rather produced; foramen moderate, incomplete; deltidia separate; dorsal valve depressed in the centre; apophysis central, forked. Lon. 6, lat. 6½ lines.

Terebratula Capensis, *Adams*, 1850, *Zool. Samarang*, p. 71. pl. 21. f. 4 (not *Gmelin*).
Kraussia Deshayesii, *Davidson*, 1852, *Ann. Nat. Hist.* p. 370.
Hab. Cape of Good Hope, at 120 fathoms.

Order II. CRYPTOBRACHIA.

Oral arms sunk into grooves in the convex centre of the inner surface of the ventral valve.

Cryptobrachia, *Gray, Ann. & Mag. N. H.* ii. 1848, p. 435; *in Wiegm. Arch.* 1849, p. 98; *and this Cat.* p. 8.
Brachiopodes cirrides (Cirrhidæ), part., *D'Orb. Cour. Elem. Paleont.* p. 80, 1849.

ARGIOPE.

Shell transversely oblong, or semicircular, smooth, or ornamented with corresponding ribs, strongly punctate; hinge-line wide; margins even; dorsal valve depressed; ventral valve truncated at the beak; area flat; foramen large, rounded; deltidium rudimentary; interior of dorsal valve furnished with one or more prominent, submarginal septa (fig. 21–23); loop originating at the base of the dental sockets, and folded into two or more lobes occupying the interspaces of the radiating septa, to which they adhere on their inner sides.

Animal with oral arms united by membrane, forming a disk, and folded so as to form two or four lobes; mantle extending to the margin of the valve and closely adherent (fig. 21).

Terebratula, § F. (& D. part.), *Blainv. D. S. N.* liii. 145, 1828.
Gray, P. Z. Soc. 1847.
Argiope (decollata), *Desl.* 1842, *Mém. Soc. Lin. Normand.* viii.
Dav. 1852, *Ann. Nat. Hist.* p. 372.
Megathyris (decollata), *D'Orb.* 1848, *Ann. Sc. Nat.*
Forbes & Hanley, Brit. Moll.
Orthis, sp., *Philippi, Moll. Sicil.*
Hagenow, Neues Jahrb.
Terebratulæ, sp., *Lamarck.*
Argiopidæ, *King, Permian Foss.* 81. 142.

Fig. 21. *Argiope decollata.*

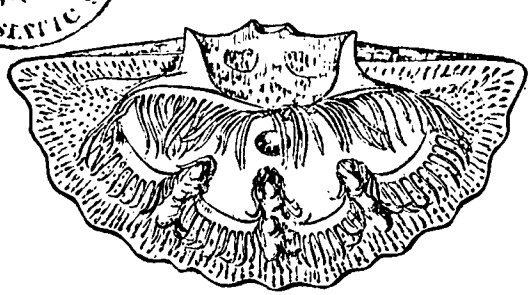


Fig. 21.—Dorsal valve with the animal, highly magnified, from a specimen in the cabinet of Thomas Davidson, Esq. The oral aperture is seen in the centre of the fringed brachial disk.

Fig. 22. *A. decollata.*

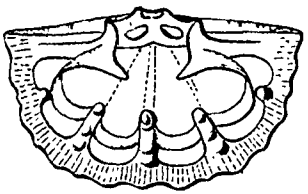
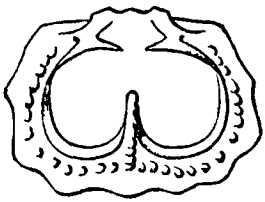


Fig. 23. *A. Neapolitana.*



* *Loop four-lobed.* Argiope.

1. ARGIOPE DECOLLATA. B.M.

Shell transversely semicircular, with a few, smooth, obtuse, radiating ribs, which correspond in each valve; colour pale brown; margins thickened internally; hinge-line straight, as wide as the shell; ventral valve deep, truncated by the wide and flat hinge-area; foramen a wide and deep notch, bordered by the rudimentary deltidia; dorsal valve furnished interiorly with three or five radiating septa, and a four-lobed loop attached to the septa, and sometimes blending with the shell in their interspaces. Lon. 4, lat. 2½, alt. 1½ lines (figs. 21, 22).

Anomia decollata, *Chemnitz, Conch. C.* viii. p. 96. t. 78. f. 705.
Dillw. R. S. i. p. 292.
Anomia detruncata, *Gmelin, S. N.* p. 3347.
Terebratula, *Lamk. E. M.* t. 243. f. 10.
Terebratula decollata, *Desh. in Lamk. Hist.* ed. 2. vii. p. 351.
Sow. Thes. Conch. vii. p. 355. t. 71. f. 68, 69, 70.
Terebratula detruncata, *Blainv. D. S. N.* liii. p. 141, 1828.
Philippi, Moll. Sicil. i. p. 96. t. 6. f. 14 *a–h.*
Megathiris detruncata, *D'Orb. Ann. Sc. Nat.* 1848.
Terebratula aperta, *Blainv. Dict. Sci. Nat.* liii. 144, 1828.
Terebratula dimidiata, *Scacchi, Oss. Zool.* ii. p. 17.
Terebratula cardita, *Risso, E. Merid.* f. 180? 1826.
Terebratula urna antiqua, *Risso, Eur. Mer.* f. 177, 1826.
Terebratula squamata, (*Eichw.*) *Bronn, Leth.* 1837, p. 908.
Eichwald, 1852, *Leth. Ross.* p. 54. t. 3. f. 12 (incorrectly figured?).
Orthis detruncata, *Philippi, Moll. Sicil.* ii. p. 69, 70.
Argiope detruncata, *Deslongchamps, Mém. Lin. Soc. Normand.* vii. p. 1, 1839.
Argiope decollata, *Dav. Ann. Nat. Hist.* 1852, p. 373.
Hab. Mediterranean, on corals, 45–105 fathoms.
Fossil. *Pliocene.* Calabria.
Miocene. Gibraltar (James Smith, F.R.S.).

** *Loop two-lobed.* Cistella (*Gray*).

2. ARGIOPE CUNEATA.

Shell very small, transversely subquadrate, with a few obscure radiating ribs; colour pale, with the interspaces of the ribs bright red; interior of dorsal valve with a single, central septum and a two-lobed loop. Lon. 2, lat. 2½ lines.

Terebratula cuneata, *Risso, Eur. Merid.* f. 179, 1826.
Blainv. D. S. N. liii. 146.
Philippi, Moll. Sicil. i. p. 96. t. 6. f. 13.
Sow. Thes. Conch. p. 355. t. 71. f. 83, 84.
Anomia Pera, *Mühlfeldt, Berlin Gesell.* i. p. 205, 1829.
Orthis Pera, *Philippi, Moll. Sicil.* ii. p. 69.
Terebratula Soldaniana, *Risso, Eur. Merid.* f. 178, 1826.
Blainv. D. S. N. liii. 146.
Terebratula detruncata, *Scacchi, Catal.* p. 17 (not *Gmel.*).
Argiope cuneata, *Dav. Ann. Nat. Hist.* 1852, p. 373.
Hab. Mediterranean, 28–69 fathoms.

3. ARGIOPE NEAPOLITANA. B.M.

Shell minute, pale brown, translucent, smooth, or obscurely ribbed; beak produced and pointed; area narrow; foramen deep, bordered by the deltidia; dorsal valve subquadrate, slightly lobed in front; margins thickened internally; septum single, central; loop two-lobed. Lon. 2, lat. 2 lines (fig. 23).

Terebratula Neapolitana, *Scacchi, Oss. Zool.* ii. p. 18, 1833.
Orthis Neapolitana, *Philippi, Moll. Sicil.* ii. p. 69.
Terebratula seminulum, *Phil. Moll. Sicil.* i. p. 97. t. 6. f. 15 (bad).
G. B. Sow. Thes. Conch. vii. p. 356. t. 71. f. 87, 88.
Terebratula lunifera, *G. Sow. Thes. Conch.* t. 71. f. 85, 86 (not *Phil.*).
Argiope Forbesii, *Davidson, Ann. Nat. Hist.* May 1852, p. 373.
Argiope Neapolitana, *Dav.* June 1852, *Proc. Zool. Soc.* p. . pl. . f. 24, 25.
Hab. Mediterranean, in deep water (60–105 fathoms).
Fossil. *Pliocene.* Tarentum.

4. ARGIOPE CISTELLULA.

Shell minute, smooth, horn-coloured, globular, truncated or slightly indented in front; beak prominent; foramen large; deltidia narrow; interior of dorsal valve with a single median septum and a two-lobed loop. Lon. 1, lat. 1, alt. ½ line.

Terebratula cistellula, *Searles Wood*, 1840, *Ann. Nat. Hist.* 5.
Megathyris cistellula, *Forbes & Hanley, Brit. Mollusca*, pl. 57. f. 9.

Argiope cistellula, *Dav. Mon. Tertiary Brach.* part 1. p. 10. pl. 1. f. 13; *Ann. Nat. Hist.* 1852, p. 373; *Proc. Zool. Soc.* p. . pl. . f. 28.

Hab. Zetland, in 40 fathoms (M'Andrew).

Fossil. *Miocene.* Suffolk (Searles Wood).

5. ARGIOPE? PUSILLA.

Shell minute, obtusely subtriangular, depressed, smooth; dorsal valve transversely oblong, depressed in front; ventral valve with a prominent beak; hinge-line straight, nearly as wide as the shell (area flat; deltidium large, triangular, striated transversely; foramen minute, apical??). Lon. 1 line.

Terebratula pusilla, *Eichwald*, 1852, *Leth. Ross.* p. 55. t. 3. f. 13.
Bronn, Index, p. 1247 (not *Sow.* or *Philippi*).

Terebratula pygmæa, (*Eichw.*) *Bronn, Leth.* p. 908 (not *Schl.*).

Fossil. *Miocene.* Volhynia.

Argiope cistellula, variety of?

6. ARGIOPE DECEMCOSTATA. B.M.

Shell minute, somewhat pentagonal, ornamented with about ten corresponding ribs; larger valve deep; area as wide as the shell, deep, triangular; foramen large; deltidia narrow, rudimentary; dorsal valve rather flat, furnished internally with a single elevated, central septum (and a very fragile two-lobed loop. *Suess*). Lon. 1, lat. 1, alt. ½ line.

Terebratula decemcostata, *Rœmer*, 1840, *Nord. Kreid.* p. 41. t. 7. f. 13.
Bronn, Index Pal. p. 1234.

Argiope decemcostata, *Dav. Mon. Cret.* p. 16. pl. 3. f. 1–13.

Terebratula Duvalii, *Dav.* 1847, *Charlesworth's Journal*, p. 113. pl. 18. f. 15–18.

Megathiris cuneiformis, *D'Orb.* 1847, *Ter. Crét.* p. 147. pl. 521. f. 1–11; *Prod.* ii. p. 259.

Fossil. *Chalk.* Sweden; England; Belgium; Germany; France; Transylvania.

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7. ARGIOPE BRONNI.

Shell minute, cuneiform, depressed, with eight corresponding ribs to each valve; area wide and distinct; foramen large. Lon. 2, lat. 3, alt. 1 lines.

Orthis Bronni, *Hagenow*, 1842, *Neues Jahrbuch*, p. 543. t. 9. f. 7.

Terebratula Bronni, *Rœmer, Kreid.* p. 41.
Bronn, Index, p. 1231.

Fossil. *Chalk.* Rügen, Baltic.

8. ARGIOPE BUCHII.

Shell minute, transverse, subquadrate, depressed; valves ornamented with six corresponding ribs; hinge-line wide as the shell, straight; area narrow; foramen small. Lon. and lat. 1½ line.

Orthis Buchii, *Hagenow*, 1842, *Neues Jahrb.* p. 544. t. 9. f. 8.
Terebratula Buchii, *Bronn, Index*, p. 1231.
Fossil. *Chalk.* Rügen.

9. ? ARGIOPE DEPRESSA.

Shell transverse, depressed, radiately 10-ribbed; ribs straight, narrow; valves unequal, the ventral convex, the dorsal flat; area triangular, narrow. Lon. 2, lat. 3 lines.

Megathyris depressa, *D'Orbigny*, 1847, *Ter. Crét.* iv. p. 149. t. 521. f. 12–16.
Fossil. *Chalk.* France.

10. ARGIOPE HIRUNDO.

Shell minute, quadrate, depressed, side and front deeply indented; valves with two diverging ribs; beak small; foramen large. Lon. and lat. 1 line.

Orthis hirundo, *Hagenow*, 1842, *Neues Jahrb.* p. 545. t. 9. f. 9.
Terebratula hirundo, *Bronn, Index*, p. 1238.
Fossil. *Chalk.* Rügen.

Fam. 2. THECIDEIDÆ.

Shell thick, punctate, rounded or oval, more or less regular, attached by the umbo of the ventral valve, or free: *ventral* valve (fig. 25) with the umbo rather produced and perforated by a minute apical foramen (*f*) usually closed at an early age; hinge-area flat, triangular; deltidium (*d*) triangular, scarcely distinct from the area; interior deeply concave, furnished with two prominent cardinal teeth (*t*); surface striated, with smooth depressions indicating the points of attachment of the adductor (*a*), retractor (*r*), and pedicel muscles (*p*); *dorsal* valve (fig. 24) small, rounded, opercular, furnished interiorly with a prominent cardinal process (*j*) between the dental sockets; oral processes united, forming a bridge over the small and deep visceral cavity and separating the anterior (oral) from the posterior (anal) orifice; disc grooved for the reception of the loop, the grooves separated by branches from a central septum; loop often unsymmetrical, divided into two or more lobes, united more or less intimately with the sides of the grooves.

Animal:—Mantle extending to the margin of the valves, closely adherent; oral arms elongated, folded upon themselves, fringed with long cirri on their outer margins, and supported by a complicated shelly loop (fig. 26).

Craniaceæ (part.), *Menke, Syn.* ed. 1. p. 56, 1828.
Craniacea (part.), *Menke, Syn.* ed. 2. p. 96, 1830.
Craniæ (Les Cranies), part., *Féruss. Tabl. Syst.* p. 38, 1821.
Thecideidæ, *Gray, Syn. B. M.* 1842, 85. 92.
Thecidæidæ, *King, Permian Fossils*, 81. 142.
Thecidiæ, *D'Orbigny, Ann. Sci. Nat.* 1848.
Cryptobrachia, *Gray, Ann. Nat. Hist.* 1848, vii. p. 435.
Ancylobrachia (part.), *King, Permian Fossils*, 81. 142.
Thecideæ (Thécidées), *Desh. Ency. Méth.* iii. t. , 1836.
Thecidiodæ, *Agassiz, Nomen.* 1847.

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1. THECIDIUM.

Char. of Fam.

Thecidium pumilum.

Fig. 24.

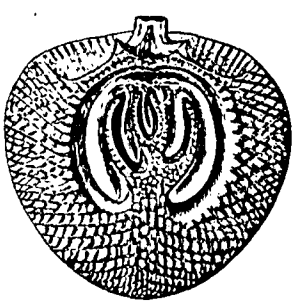

Fig. 25.

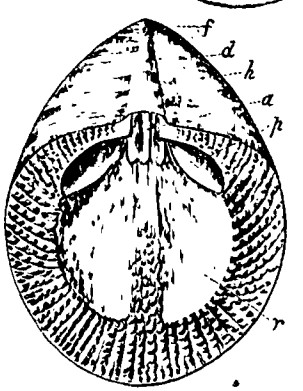

Fig. 24. Dorsal valve:—*j*. cardinal process.
Fig. 25. Ventral valve:—*f*. foramen (closed); *d*. deltidium; *t*. teeth; *a*. adductor impressions; *r*. retractors; *p*. pedicel-muscles.

Fig. 26. *Thecidium Mediterraneum.*

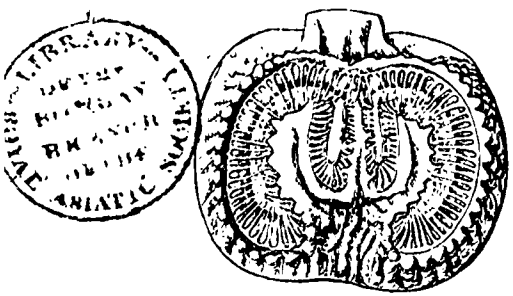

Fig. 26.—Interior of the dorsal valve, from a specimen in the cabinet of Thomas Davidson, Esq.

Thecidea (radiata), *Defr. in Fer. Tabl. Syst.* 38, 1821.
Blainv. Man. Malac. 516. 629, 1825; *Dict. Sci. Nat.* liii. p. 434, 1828.
Risso, Europ. Merid. 393, 1826.
Thecidium, *G. B. Sowerby, Gen.* xx. 1844; *Thes. Conch.* vii. 1846.
Terebratula, *Faujas, Mont St. Pierre*, t. 27. f. 8.
Terebratula, sp., *Lamk. Hist.*

1. THECIDIUM MEDITERRANEUM.

Shell small, pale yellow, smooth, subquadrate, slightly bilobed in front, attached by the produced and pointed beak; hinge-area triangular, smooth; margins thickened and granulated internally; brachial septum 3-lobed; loop rudimentary, 4-lobed. Lon. 5, lat. 4½ lines (fig. 26).

Thecidea Mediterranea, *Blainv. Man. Malac.* 629, 1825; *Dict. Sci. Nat.* liii. p. 434, 1828.
Desh. in Lamk. Hist. ed. 2. vii. p. 348; *Ency. Méth.* iii. p. 135.
Risso, Eur. Merid. iv. f. 183 (bad).
Philippi, Moll. Sicil. i. p. 99. t. 6. f. 17; ii. p. 70.
Dav. Ann. Nat. Hist. 1852, p. 374.
Thecidium Mediterraneum, *Sow. Gen.* f. 6, 7; *Thes. Conch.* vii. p. 371. t. 73. f. 30–32.
Thecidea testudinaria, *Michelotti, Brach.* p. 5; *Préc. Faun. Mioc.* pl. 2. f. 26.
Thecidæa spondylea, *Scacchi, Cat.* 8. f. 7–10.
Hab. Mediterranean, attached to corals.
Fossil. *Miocene.* Turin.

2. THECIDIUM WETHERELLI. B.M.

Shell somewhat pentagonal, slightly indented in front, smooth, attached by the beak or whole surface of the ventral valve; hinge-area narrow; deltidium large, triangular, elongated; interior of larger valve furrowed by close, granular, longitudinal striæ; dorsal valve with a single deep curved sinus on each side; cardinal process large; margin minutely granulated. Lon. lat.

Thecidea Wetherelli, *Morris*, 1851, *Ann. Nat. Hist.* pl. 14. f. 1–3.
Davidson, Mon. Cret. Brach. p. 14. pl. 1. f. 15–26.

Fossil. *Chalk.* England (attached to shells and Echinidæ).

3. THECIDIUM PUMILUM. B.M.

Shell nearly circular, free, ornamented with diverging, interrupted, granular ribs; dorsal valve circular, flat, furnished internally with a broad granular border; loop 5–7-lobed, the lobes augmenting regularly from the centre outwards; central process granulated; ventral valve with a produced uncinate beak. Lon. 4, lat. 3½, alt. 1 line (figs. 24, 25).

Terebratulites papillatus, *Schlotheim*, 1813, *Min. Tasch.* vii. p. 113. (name only).
Terebratula pumila, *Valenc. in Lamk.* 1819, *Hist. Nat.* 58.
Dav. Ann. Nat. Hist. June 1850, pl. 14. f. 58 (not *Sow.*).
Thecidea radians, *Brongn.* 1825, *Env. Paris*, p. 325.
Thécidée rayonnante, *Defrance*, 1828, *Dict. Sci. Nat.* liii. p. 434. t. 80. f. 1.
Thecidea radiata, *Desh. Enc. Méth.* iii. p. 1035.
Lamk. Hist. ed. 2. vii. p. 346.
Goldf. Petr. Germ. p. 289. pl. 161. f. 2.
Thecidea papillata, *Bronn*, 1837, *Leth. Geog.* p. 633. t. 30. f. 3.
D'Orb. Ter. Crét. p. 154. pl. 523. f. 18.
Thecidea recurvirostra, *D'Orb. Ter. Crét.* p. 156 (exclud. synon.). pl. 523. f. 9–17; *Prod.* ii. p. 260 (not *Gerv.*).

Fossil. *Chalk.* Belgium; France.

4. THECIDIUM RECURVIROSTRE. B.M.

Shell regular, oval, smooth, or only marked with concentric lines of growth; free, or attached when young by the extremity of the beak; beak pointed, thick, rounded and recurved; deltidium narrow, raised; dorsal valve deeply concave, furnished internally with a wide border, radiately striated; loop unsymmetrical, 5-lobed, grooves deep, parallel with the margin. Lon. 3, lat. 2, alt. 1½ lines.

Thecidea recurvirostris, *Gerville, MSS.*
Defr. 1828, *Dict. Sc. Nat.* liii. p. 435.
Goldf. Petr. Germ. ii. p. 289. t. 161. f. 3.

Thecidium curvirostre, *Sow. Genera*, f. 4, 5.
Desh. ed. Lam. vii. p. 349.
Fossil. *U. Chalk.* France.

5. THECIDIUM HIPPOCREPIS. B.M.

Shell ovate-orbicular, smooth, attached by the truncated umbo; dorsal valve concave; interior with broad striated margin, impressions curved, slightly digitated on their inner sides, separated by a wide space. Lon. 3½, lat. 3 lines.

Thecidea hippocrepis, *Goldfuss, Petr.* ii. p. 289. t. 161. f. 4.
D'Orb. Prod. ii. p. 260.
Thecidea vermicularis, *Bronn, Index*, p. 1267.
Terebratulites vermicularis, *Schl. Taschb.* 1813, vii. 1. 113.
? Thecidea prisca, *Münster MS. Jura, Thurnau.*
Fossil. *Chalk.* Maestricht; Essen.

6. THECIDIUM HIEROGLYPHICUM. B.M.

Shell ovate-orbicular, smooth, attached by the truncated apex of the produced umbo; interior of ventral valve exhibiting two reniform vascular impressions in front of the retractor scars; dorsal valve flat; internally with a broad striated border; brachial impression palmate, 6-lobed, converging. Lon. 5, lat. 4½ lines.

Thecidea hieroglyphica, *Defrance, Dict. Sc. Nat.* liii. 435.
Goldf. Petr. ii. p. 290. t. 161. f. 6.
Terebratula hieroglyphica, *Kefst. Natg.* ii. p. 680.
Thecidium pumilum, *G. Sow. Genera of Shells*, f. 1, 2 (not *Ter. pumila*, Lamk.).
Fossil. *Chalk.* Maestricht.

7. THECIDIUM DIGITATUM. B.M.

Shell irregular, smooth, attached by the truncated apex of the ventral valve; cavity of the ventral valve striated; retractor impressions large, deep and smooth; dorsal valve transversely oval, with a wide hinge-line; internally with a broad margin, and two diverging, symmetrical, palmated and 5-lobed impressions. Lon. 5, lat. 6 lines.

Thecidium digitatum, *G. Sowerby, Genera*, no. 20. f. 3.
Thecidea digitata, *Bronn, Lethæa*, p. 664. t. 30. f. 4.
Goldf. Petr. ii. p. 290. t. 161. f. 6.
Thecidea Essensis, *Rœmer, Kreid.* p. 36.
D'Orb. Prod. ii. p. 173.
Fossil. *U. Greensand.* Westphalia.

8. THECIDIUM RUGOSUM.

Shell irregular, attached by the truncated apex of the ventral valve; ventral valve striated lengthwise and squamose with lines of growth; dorsal valve round, slightly truncated by the hinge-line, smooth, furnished internally with a granulated margin and two 3-lobed impressions, the lobes straight and diminishing in length inwards. Lon. 2½ lines.

Thecidea rugosa, *D'Orbigny*, 1847, *Ter. Crét.* p. 153 ("*T. hippocrepis*") pl. 522. f. 8–14.

Fossil. *U. Greensand.* France.

9. THECIDIUM TETRAGONUM.

Shell roundish, attached by the truncated apex of the ventral valve, smooth, with obscure lines of growth; hinge-line wide; ventral valve with two, nearly symmetrical palmate, 4-lobed impressions, the right side largest. Lon. 2½ lines.

Thecidea tetragona, *Rœmer*, 1839, *Ool.* t. 18. f. 4.
D'Orb. Ter. Crét. iv. p. 152. t. 522. f. 1–7.

Fossil. *Neocomian.* Hanover; France.

10. THECIDIUM MOREANUM.

Shell minute, rounded, trigonal, equilateral, with an acute apex; dorsal valve convex, concentrically substriated, tuberculated near the front margin; ventral valve attached by its whole breadth, area triangular, interior with a longitudinal ridge. Lon. and lat. ¼ line.

Thecidea Moreana, *Buvignier*, 1852, *Géol. de la Meuse*, p. 26. pl. 20. f. 30–32.

Fossil. *Coral Rag.* France.

10*. ? THECIDIUM CORALLINUM.

Shell like *T. antiqua*, but triangular, and much narrower at the hinge-line.

Thecidea Corallina, *D'Orbigny*, 1850, *Prod.* ii. p. 25.

Fossil. *Coral Rag.* France.

11. ? THECIDIUM CORDIFORME.

Shell oval; beak pointed; front bilobed.

Thecidea cordiformis, *D'Orbigny*, 1850, *Prod.* i. p. 344.

Fossil. *Kelloway Rock*? France: attached to *Ammonites*.

12. THECIDIUM DICKINSONII.

Shell minute, transversely oval, smooth; dorsal valve convex; ventral valve attached by its whole surface; area nearly as wide as the shell, straight. Lon. 1½, lat. 2½ lines.

Thecidea Dickinsonii, (*Moore*) *Davidson, Mon. Ool.* p. 14.

Fossil. *Inferior Oolite.* Somersetshire, attached to *Terebratulæ.*

13. ?THECIDIUM DUBIUM.

Thecidea dubia, *D'Orb. Prod.* i. p. 288 (undescr.).

Fossil. *Inferior Oolite.* France.

14. THECIDIUM TRIANGULARE.

Shell triangular, slightly bilobed, smooth, gibbose; hinge-area triangular, high and narrow; deltidium distinct. Lon. 1, lat. 1 line.

Thecidea triangularis, *Davidson*, 1851, *Mon. Ool.* p. 14. pl. 1. f. 11, 12; *Ann. Nat. Hist.* April 1852, pl. 14. f. 13.
D'Orb. MS. 1849, *Prod.* i. p. 316? not described.

Thecidea Virdunensis, *Buvignier*, 1852, *Géol. de la Meuse*, p. 27. pl. 20. f. 33–35.

Thecidea Davidsoni, *Buv. id.* p. 26. pl. 20. f. 36–38.

Fossil. *Lias* (*Marlstone*). Somerset (Moore).
Inferior Oolite. Cheltenham (Wright).
Bath Oolite. Caen (D'Orb.)?

15. THECIDIUM RUSTICUM.

Shell minute, squarish, slightly convex, smooth; interior of dorsal valve with a prominent muscular fulcrum; internal margin thickened and granulated; apophysary ridge simple, parallel with the margin, and a little within it, deeply bilobed. Lon. 1, lat. 1 line.

Thecidea rustica, (*Moore*) *Davidson*, 1851, p. 15. pl. 1. f. 14.

Fossil. *Upper Lias.* Ilminster.

16. THECIDIUM BOUCHARDII.

Shell transversely elongated, smooth, attached by the whole surface of the ventral valve; hinge-area long and narrow; deltidium broad, short and elevated; dorsal valve convex; margin shelving. Lon. 3, lat. 4 lines.

Thecidea Bouchardii, *Dav. Mon. Ool.* 1851, p. 14. pl. 1. f. 15, 16; *Ann. Nat. Hist.* April 1852, pl. 14. f. 10–12.

Fossil. *Lias* (*Marlstone*). Ilminster, attached to *Rhynchonellæ*; France.

17. THECIDIUM MOOREI.

Shell subquadrate, smooth, attached by the whole surface of the ventral valve; valves slightly indented in front; front margins much thickened, steep; dorsal valve almost flat; lower valve with a well-defined triangular area; deltidium large, elevated. Lon. 2, lat. 2, alt. 1 line.

Thecidea Moorei, *Davidson*, 1851, *Mon. Ool. Brach.* p. 13. pl. 1. f. 10.

Fossil. *Lias* (*Marlstone*). Ilminster, attached to *Rhynchonellæ*.

18. THECIDIUM DESLONGCHAMPSII.

Shell irregularly oblong, smooth, attached by the truncated beak of the ventral valve; *ventral valve* deep; area wide, short and irregular; deltidium indistinct; *dorsal valve* subcircular, slightly convex, its interior surface surrounded by a broad, granulated border; a single central septum divides the brachial cavities, in each of which there is a granulated lobe. Lon. 2, lat. 1½, alt. 1½ lines.

Thecidea Deslongchampsii, *Davidson*, 1852, *Ann. Nat. Hist.* April, pl. 14. f. 6–9.

Fossil. *Lias*. Normandy.

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CATALOGUE

OF THE

BIVALVE MOLLUSCA

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

PART I.

PLACENTADÆ AND ANOMIADÆ.

PRINTED BY ORDER OF THE TRUSTEES.

LONDON, 1850.

CATALOGUE OF

PLACENTADÆ & ANOMIADÆ.

Family PLACENTADÆ.

Placentadæ, *Gray, Proc. Zool. Soc.* 1848, 201.
Placunidæ, *Gray, Syn. B. M.* 1842, 84, 92; *Hermann. Ind.* 279.
Placunoidæ, *Agassiz, Nomen. Zool.* 1847; *Hermann. Ind.* 279.
Placuna, *Lamk. Hist.* 2 ed. vii. 269.
Ostrea, part *Ferus. Tab. Syst.* 40, 1821.
Pectinidæ, part *Fleming, Brit. Anim.* 381, 1828.
Anomia, part *Hermannsen, Ind.* i. 61, 1846.

Lamarck describes three species of this genus, depending on the general outline and the waved or flat form of the shell, characters which are liable to considerable variations, as may be found on the mere inspection of any considerable number of specimens.

The hinge forms a more permanent character, and affords the means of dividing the species into two sections, and furnishes characters which separate them from each other. The right valve is the flattest, and bears the ridges of the hinge.

Chemnitz gives the best character for the species, and has observed the character furnished by the hinge, which has been overlooked by Lamarck, and by all recent authors.

Synopsis of the Genera.

a. *Hinge-ridges linear, diverging, only slightly raised.*

1. Placuna. Hinge-ridges of nearly equal length; muscular scar under centre of hinge.
2. Placènta. Hinge-ridges unequal, hinder much the longest; muscular scars rather in front of middle of hinge.

b. *Hinge-ridge transverse, elevated on a broad and high process.*

3. HEMIPLACUNA. A small pit in front of the base of the hinge-ridge. *Fossil.*

a. *Hinge-ridges linear, diverging, only slightly raised.*

1. PLACUNA.

Shell purplish, subopaque; hinge-ridges rapidly diverging from one another at about the angle of 45 degrees, of nearly equal length. Muscular scar under the centre of the hinge.

Placuna, *Solander*, 1785, fide *Chemn. Conch.* viii. 116; *Humph. Mus. Calonn.* 1797; *Lamk. Syst.* 135, 1801.
Placuna, sp. *Brug. E. M.* t. 174, 175, 1792; *Lamk. Hist.* 2 ed. vii. 270.
Ephippium, *Bolten, Mus.* 1798, 2 ed. 116, 1819; *Chemn. Conch.* vii. 116.
Placenta, β., *Schumacher, N. Syst.* 113, 1817.
Placuna pectinoides, *Lamk. Ency. Meth.* t. 175, f. 1-4, is a species of Plicatula, *Desh. in Lamk. Hist.* 2 ed. vii. 271.

1. PLACUNA SELLA.

Shell flexuous, outline rather rhombic, being straight in front and rather notched behind, rather thick, purple; the ridges of the hinge not longer than they are separate from each other at the base.

Anomia Sella, *Gmelin, S. N.* 3345, 1788; *Dillw. R. S.* i. 297.
Placuna Sella, *Lamk. Hist.* vii. 270, *No.* 1.
Ephippium anglicanum maximum, *Chemn. C.* viii. t. 79, f. 714, cop. E. M. t. 174, f. 1.
Placenta Ephippium, *Retz.* 1788.
Placenta Sella, *Gray, Proc. Zool. Soc.* 1848, 113.

a, *b*. Adult. Purple, flexuous. China.
c. Nearly adult. Flexuous. China. Mus. Cracherode.
d. Young. Single valve; flat, purplish. India. Presented by Dr. Horsfield.
e. N. W. Australia. Presented by the Earl of Derby.

Var. β. Shell nearly flat, subquadrangular, notched before and behind.

2. PLACUNA PAPYRACEA.

Shell rather four-sided, nearly flat, thin, hyaline, white and purple varied.

Placuna papyracea, *Lamk. Hist.* vii. n. 2.
Ephippium parvum, *Chemn. Conch.* viii. t. 79, f. 719, cop. E. M. t. 174, f. 2.
Anomia Sella junior, *Dillw. R. S.* i. 297.
Placenta papyracea, *Gray, Proc. Zool. Soc.* 1848.

a, *b*, *c*, *d*. Shell thin, slightly flexuous, more or less purple varied. China.
e. Single valve; flat, thin, brown, transparent edges. India. Presented by Dr. Horsfield.
f. Flat; front, and especially the hinder edge notched, thin. Pale purple spotted. Australia. Presented by the Earl of Derby.

Perhaps only the young of *P. Sella*.

3. PLACUNA LINCOLNII.

Shell flat, rather solid, subopaque, outline suborbicular, rounder before and behind; ridges of the hinge elongate, longer than they are separate from each other at the base.

Placenta Lincolnii, *Gray, P. Z. S.* 1848, 113; *Moll. t.* 3.

a. Australia; Mr. W. Davison. Presented by Abraham Lincoln, Esq.

This species is named after the late Mr. Abraham Lincoln, who kindly presented the specimen here described, and who was well known for his fondness for conchology and the liberality with which he allowed persons to use his extensive collection.

2 PLACENTA.

Shell semitransparent, flat, outline suborbicular; ridges of the hinge very gradually diverging from each other, the hinder ridge much the longest. Muscular scar rather in front of the middle of the hinge.

Placenta, *Retzius, Dissert.* 15, 1788 (not *Klein*); *Schum. N. S.* 113, 1817; *Gray, P. Z. S.* 1848.
Placuna sp. *Solander*, 1785, fide *Chemn. Cab.* viii. 116; *Brug. E. M.* t. 174, 175, 1792; *Lamk. Hist.* 2 ed. vii. 270.

1. PLACENTA OBICULARIS

Shell colourless, semitransparent; when young, pale purplish.

Placuna placenta, *Solander, MSS.; Lamk. Hist.* N. 3.

Anomia placenta, *Linn. S. N.* 1154; *Chemn. Conch.* viii. t. 79, f. 176, cop. E. M. t. 173, f. 2; *Dillw. R. S.* i. 297; *Lister, Conch.* t. 225, f. 60, t. 226, f. 61.

Placenta orbicularis, *Retz. Dissert.* 15, 1788; *Gray, P. Z. S.* 1848.

a. Adult. China.
b, c. Adult. China. Mus. Broderip.
d. Nearly adult. India. Presented by Dr. Horsfield.
e, f, g, h. Half grown. China.
i, j. Small, rather thicker. N. E. coast of Australia or Port Essington. Presented by the Earl of Derby.

b. *Hinge-ridge transverse, elevated on a broad, high, oblique process.*

3. HEMIPLACUNA.

Shell free; valves orbicular, flat, external surface minutely laminar and radiately striated, especially on the edge of the plates; muscular scar in each valve single, nearly central, circular; the right valve flat, with a large, oblong, elevated, transverse process for the cartilage, having a very small concavity in the inner surface in front of the cartilaged process representing the sinus in *Anomia;* the left valve rather more convex, with an oblong, transverse pit for the internal cartilage under the umbo.

Hemiplacuna, *G. B. Sowerby, MSS.; Gray, P. Z. Soc.* 1849, 123.

Anomia or Placuna sp. *Desh. in Lamk. Hist.* 2 ed. vii. 270, note.

This shell has all the external characters of the flat species of *Placuna*, and has the same muscular impression; but instead of having the two linear, diverging ridges and grooves to give attachment to the cardinal cartilage, it has an oblong, elevated process in the right valve, and an oblong cavity in the left, exactly similar to those found in the genus *Anomia;* and on the inner surface of the right valve, just in front of the base of the process which supports the cartilage, there is a small, shallow, roundish pit, with a short furrow towards the centre of the shell, which is evidently a rudimentary representation of the sinus found in the genus *Anomia*. This rudimentary sinus is not visible on the outer surface of the shell.

This shell forms the passage between the genus *Anomia*, or rather *Placunanomia*, and *Placuna*. It shows the gradual change which takes place between the three genera. In *Anomia* there are two muscles for the purpose of attaching itself to marine bodies, which form a plug which is free from the sinus of the shell. In *Placunanomia* there is only a single muscle to perform the same office, and in the more typical species of this genus the plug itself is fixed into the surface of the shell, forming, as it were, part of its substance. In *Hemiplacuna* and *Placuna* there is no muscle or plug for attachment, and the shells are free; but in *Hemiplacuna* there is a rudimentary development of the sinus through which the plug is usually emitted, and the ligament which connects the shell is of the same form as that found in the genera *Anomia* and *Placunanomia*.

The name for the genus is not consistent with the Linnæan canon; but used rather than burthen the genus with two names.

1. Hemiplacuna Rozieri.

Placuna, sp., *Rozière*, *Description d'Egypte*, *Minéralogie*, t. 11, f. 6.
Hemiplacuna Rozieri, *G. B. Sow. MSS.*; *Gray*, *P. Z. S.* 1849, 124.
Anomia? or Placuna? *Desh. in Lamk. Hist.* vii. 270, note.

a. Fossil. Shore of the Red Sea; Vallée de l'Egarement. Purchased of Mr. Sowerby.

FAMILY ANOMIADÆ.

Anomiadæ, *Gray*, *Syn. B. M.* 1840, 1842, 82, 92; *P. Z. S.* 1848, 1849, 113.
Anomiea, part, *Hermannsen*, *Ind. Gen.* i. 61, 1846.
Anomia, sp., *Linn. S. N.* xii. 1150, &c., not *Fab. Colonna*, 1616.
Anomia, *Muller*, *Zool. Dan. Prod.* 31, 1776; *Lamk. Syst.* 137, 1801.
Ostrea, part *Ferussac*, *Tabl. Syst.* 1819.
Ostreadæ, part *Fleming*, *Brit. Anim.* 381, 394, 1828.
Echion and Echionoderma, *Poli*, *Test. Sicil.* i. 34, 1791, ii. 225, 1795.
? Bursula, sp., *Klein*, *Ost.* 173, 1753.
Stola, part *Klein*, *Ost.* 173, 1753.
Cepa, *Humph. Mus. Calonn.* 1797.
Fenestella, *Bolten*, *Mus.* 1798, 2 ed. 134, 1819.
Anomya, *Agassiz*.

The European species of *Anomiadæ* have been much multiplied, while on the other hand the exotic species have been almost entirely neglected.

The form, substance, surface and colour of the shell, which have been used to distinguish the species, were suspected by Montague to be dependent on the age of the specimens and the locality in which they happened to be found, and further researches have proved the accuracy of these observations.

Synopsis of the Genera.

1. PLACUNANOMIA. Shell not eared; upper valve with two subcentral muscular scars; the anterior upper lobe of the notch agglutinated to the cardinal edge; plug shelly at the top and near the body, to which it is attached, and with horny longitudinal laminæ below and internally.

2. ANOMIA. Shell not eared; upper valve with three subcentral muscular scars; the anterior upper lobe of the notch separated from the cardinal edge; the plug entirely shelly, and quite free from the edge of the notch.

3. LIMANOMIA. Shell eared on each side of the umbo; sinus high up near umbo. Muscular scars ? *Fossil.*

1. PLACUNANOMIA.

Upper or dorsal valve with two subcentral muscular scars; the upper scar radiately veined. Byssal notch distinct, converted into a hole by the upper part of the anterior lobe of the notch being soldered to and forming part of the cardinal edge: the plug triangular, gradually enlarging in size; the apex and outer surface next to the body to which it is attached, calcareous, longitudinally striated; the inner surface covered with horny, longitudinal, parallel laminæ, and more or less agglutinated to the edge of the notch.

Anomia, β., *Schumacher, Essai*, 1817.
Placunanomia, *Broderip, Proc. Zool. Soc.* 1832, 29; *Müller, Syn.* 176; *Desh. in Lamk. Hist.* vii. 269; *Gray, P. Z. Soc.* 1849, 119.
Pododesmus (decipiens), *Philippi, Wiegmann, Arch.* i. 385, 1837.
Anomia, pars, *Blainv. Man. Mol.*; *Montague*; *Forbes & Hanley.*
Ostrea, sp. *Da Costa*; *Montague.*
Placunanomia, *D'Orb. Amér. Mérid.*
Placunomia, *Swains. Malac.* 39, 1840.

Mr. Broderip, who established this genus, does not observe the character furnished by the muscular impressions, or the lobe of the notch: he merely says, "Impressio muscularis in utrâque valvâ subcentralis. In valvâ superiore organi adhesionis impressio superaddita." And further, that "the organ of adhesion, which in its bony character (for it is more bone than shell) resembles that of *Anomia*, does not perforate the lower valve directly, but is inserted between the laminæ of the internal surface of the lower valve, above the muscular impression and below the hinge, and passes out into an external, irregular, somewhat longitudinal, superficial fissure or *cicatrix*, which is narrowest at the hinge margin, and which it entirely fills to a level with the surrounding surface."

This form is produced by the gradual increase of the size of the plug and the simultaneous increase of the size of the shell.

Some have considered the "plug" or "stopper" of *Anomia* to be a third valve, which is evidently a mistake. Phillippi (*Moll. Sicil.*

i. 92) considers it as the ossification of the tendon of the adductor muscle. Mr. Broderip, in the passage quoted, regards it as a *bone*. In Dr. Dieffenbach's Travels Mr. Gray has remarked: "The plug is evidently only a modification of the kind of laminar beard formed by the end of the foot of the arcs (*arcæ*); for, like it, it is formed of numerous, parallel, erect, longitudinal horny laminæ, placed side by side, extending from the apex to the margin, and it is on these plates that the calcareous matter is deposited when the attachment assumes its shelly substance. The same structure is to be observed in the plug of the European *Anomia Ephippium* (*striata*)." — *Voy. New Zealand*, ii. 261.

Messrs. Forbes and Hanley compare it to the byssus of *Pecten*, and predict that when the very young Anomiæ have been observed, they will be found to be attached by threads, like that genus (*Brit. Moll.*). The plug of a very small specimen of the genus is laminar, like that of the adult shell.

M. Philippi, when describing *Pododesmus*, appears to have observed only the upper of the two muscular scars, for he gives as the generic character, "*Impressio muscularis unica, ovata*," and he only figures the larger upper one on the plate.

The upper scar, which is usually of a larger size, and has its surface covered with radiating veins, while the lower is generally punctated, appears to be the one which gives rise to the muscle that is attached to the inner surface of the plug.

The examination of the upper valve of a large series of specimens of *Placunanomia patelliformis* has shown that the position of the two muscles is liable to a slight variation; in by far the larger number of specimens the small lower muscle is quite close to and confluent with the scar of the upper larger muscle, but in a few specimens it is separated from the upper larger one by a small interval or space. Hence probably the three West Indian species of the genus may prove, when a larger series of specimens have been collected and compared, only varieties of the same species.

* *Shell plicately folded. Perforation of lower valve small, firmly embracing the plug.* PLACUNANOMIA.

1. PLACUNANOMIA CUMINGII.

Shell depressed; edge of the valves with three or four large angular folds.

Placunanomia Cumingii, *Broderip, Proc. Zool. Soc.* 1832, 29; *Sow. Genera*, t.; *Manual*, f. 189-191; *Gray, P. Z. Soc.* 1849, 121.

Hab. Central America; Gulf of Dulce, Province of Costa Rico. From Mr. Cuming's collection.

** *Shell ovate, radiately ribbed; edge not plicated. Perforation of lower valve moderate, firmly embracing and inclosing the plug.* American. PODODESMUS.

Pododesmus, *Philippi*, *Wiegm. Arch.* i. 387, 1837; *Gray*, *P. Z. S.* 1849, 121.

2. PLACUNANOMIA RUDIS.

White; disk brown; laminæ smooth.

Upper valve with two rounded, separate scars of nearly equal size, the hinder one rather more transverse.

Placunanomia rudis, *Broderip*, *Proc. Zool. Soc.* 1834, 2; *Gray*, *P. Z. S.* 1849, 121.

Pododesmus decipiens, *Philippi*, *Wiegmann*, *Arch.* i. 1837, 387, t. 9, f. 1 (one scar left out).

Hab. East Indies? *Broderip.* Mus. Cuming. Havana; *Philippi.*

3. PLACUNANOMIA FOLIATA.

White; laminæ smooth, with very slight, distant, radiated ribs; disk purple brown.

Upper valve with two nearly united scars; the upper largest, and rather elongated; lower small, rounded.

Placunanomia foliata, *Broderip*, *Proc. Zool. Soc.* 1834, 2; *Gray*, *P. Z. S.* 1849, 121.

P. echinata, *Broderip*, *Proc. Zool. Soc.* 1834, 2.

"P. pectinata, *Brod.*" in Mus. Cuming.

a. Upper valve of young. St. Vincent. Jamaica. From the Rev. L. Guilding's collection.

b, *c*, *d*, *e*. Perfect. On Spondylus. West Indies. Mus. Broderip.

The specimen of *Placunanomia echinata*, from the island of Nevis, in Mr. Cuming's collection, appears to be only an imperfect specimen of this species. Mr. Broderip doubted if this might not be the case, when he described it.

4. PLACUNANOMIA ABNORMALIS.

White, radiated, ribbed. Upper valve with two scars, confluent on the lower hinder edge; the upper one rather the largest.

"Placunomia abnormalis, *Sow.*" in Brit. Mus.; *Gray*, *P. Z. S.* 1849, 121.

a. West Indies.

These three species are very nearly related to each other, and if it were not for the difference in the position of the scars, might be taken for one. The first is white, and the two last have a brown blotch on the internal surface of the dorsal valve.

*** *Shell ovate, not plicated; radiately ribbed. Perforation of lower valve large, only slightly embracing the large thin plug.* MONIA.

Monia, *Gray, P. Z. S.* 1849, 121.

† *American.*

5. PLACUNANOMIA MACROCHISMA.

Upper valve with two scars, partly confluent on the lower hinder edge; the upper scar largest. Lower valve with an oval, oblique scar, narrowed behind, rather in front of the plug.

Anomia macrochisma, *Deshayes, Rev. Cuvier, Zool.* 1839, 359; *Mag. de Zool.* 1841, t. 34.
Placunanomia Broderipii, *Gray, B. M.* 1842, and Mus. Cuming.
Placunanomia macrochisma, *Gray, P. Z. S.* 1849, 121.

a, b. Kamtschatka.

M. Deshayes observes: "On sait que dans le plus grand nombre des Anomies la perforation se reduit ordinairement en un simple échancrure, parce que les deux parties du bord supérieur ne se rejoignent jamais. Ici au contraire le trou est complète, et la valve est réellement perforée." This character is common to all the species of *Placunanomia.* M. Deshayes does not figure nor describe the plug. The habitat, "Cagayan, Lucon," assigned to this species by Mr. G. B. Sowerby must be a mistake. It is the specimen referred to by Mr. Broderip in the observations on the genus in the Proceedings of the Zoological Society.

6. PLACUNANOMIA CEPIO.

Scars two, far apart; upper very large, ovate, longitudinal, central; lower smaller, oblong, oblique, rather behind the upper.
Plug large, flat, broad. Notch large, wide.

Placunanomia Cepio, *Gray, P. Z. S.* 1849, 121.

a. Adult. California. Presented by Lady Katherine Wigram.

7. PLACUNANOMIA ALOPE.

Upper valve flat, smooth, radiately striated. Scars two, well separated, rounded, equal-sized.

Placunanomia alope, *Gray, P. Z. S.* 1849, 122.

a, b. California. Two upper valves. Presented by Lady Katherine Wigram.

†† *European.*

8. PLACUNANOMIA PATELLIFORMIS.

Shell suborbicular, convex or quite flat, radiately striated; inner-disk greenish. Apex rather within the dorsal margin.

The upper muscular scar of the dorsal valve very large, oblong; the lower one small, roundish, on the lower part of the hinder margin of the upper one.

The peduncle of the cartilage with a triangular cavity in front, under the tip, and continued in an oblong, rib-like ridge towards the centre of the shell.

Anomia patelliformis, *Linn. S. N.* 1152; *Nov. Act. Upsal.* 1773, i. 42, t. 5, f. 6, 7; *Retzius, Nov. Gen. Test.* ii.; *Sars*, fide *Mus. Cuming*; *Loven, Moll. Scand.* 30; *Forbes & Hanley, Brit. Moll.* 334, t. 56; *Wood, Index Test.* t. 10, f. 10, not *Chemn.*

Squama Magna, *Chemn. Conch.* vii. 87, t. 77, f. 697.

Anomia Squama, *Gmelin, S. N.*; *Schumacher, Essai.*

Ostreum striatum, *Da Costa, Brit. Conch.* 162, t. 11, f. 4.

Anomia undulatim striata, &c., *Chemn. Conch.* viii. 8, t. 77, f. 699.

Anomia undulata, *Gmelin, Syst. Nat.* i. 3346; *Mont. Test. Brit.* 157, t. 4, f. 6; *Maton & Racket, Trans. Linn. Soc.* viii. 103; *Turton, Conch. Dict.* 4, *Bivalves*, 230, t. 18, f. 8, 9; *Dillw. R. S.* i. 289; *Wood, Index, Test.* t. 11, f. 9.

Ostrea striata, *Pulteney in Hist. Dorset*, 36; *Donovan, B. Shells*, ii. t. 45; *Mont. T. B.* 153, 580.

Anomia striata, *Loven, Index Moll. Scand.* 29; *Forbes & Hanley, Brit. Moll.* 336, t. 55, f. 1, 6, t. 53, f. 6.

Placunanomia patelliformis, *Gray, P. Z. S.* 1849, 122.

a, b, c, d. Adult and young. British shores. Mus. Montague. *e, f.* Coast of Devonshire.

This species is easily known from the other European species of the family by being generally thicker and regularly radiately ribbed, and greenish; but the number and position of the muscular scars at once separate it from all the multiform varieties of that species. Some authors, overlooking the latter character, have been inclined to regard it as a mere variety of *Anomia ephippium.*

††† *Australian.*

9. PLACUNANOMIA ZEALANDICA.

Suborbicular, white, smooth; upper valve with distant, radiating grooves; internally dark green.

Upper valve with two confluent scars; upper oblong, longitudinal, lower rather small and more transverse.

Anomia Zealandica, *Gray, in Dieffenbach's New Zealand*, ii. 261, 1843.

Placunanomia Zealandica, *Gray, P. Z. S.* 1849, 123.

a. Adult specimen. New Zealand: on the inside of mussel shells. Presented by Dr. Stanger.

10. PLACUNANOMIA IONE.

Shell white, laminar; edge of the laminæ with small, slender, elongated processes; internally green.

Lower muscular scars small, round, on the lower hinder edge of the larger one; sinus or perforations large.

Placunanomia ione, *Gray, P. Z. S.* 1849, 123.

a. A single dorsal valve. On rocks, Australian Seas. Van Diemen's Land. Presented by Dr. A. Sinclair.

11. PLACUNANOMIA COLON.

Shell (upper valve) flat, with rather irregular, flat, radiating ribs; white, lower spotted; upper valve with two separate scars; the upper one oblong, longitudinal, the lower one much smaller, circular.

Placunanomia colon, *Gray, P. Z. S.* 1849, 123.

Hab. ——?

Mr. Cuming's collection (no. 10). Mr. Humphrey's collection a single upper valve of a rather young shell.

2. ANOMIA.

Upper valves with three subcentral muscular scars; byssal notch distinct; the upper part of the anterior lobe of the notch separate from and often partially overlapping the front of the cardinal edge; the plug thick, elongate, entirely shelly, and quite free from the edge of the notch.

Anomia, *Müller*, 1776; *Retzius*, 1788; *Lamk.* 1801; *Megerle*, 1811; *Gray, P. Z. S.* 1849, 114.
Anomia, pars, *Linn. S. N.*
Anomia, A. *Schumach. Essai*, 1817.
Echion and Echinonoderma, sp. *Poli, Sicil. Test.* i. 34, 1791, ii. 255, 1795.
Fenestrella, *Bolten, Mus.* 1798, 2 ed. 134, 1819.
Lampades, pars, *Gevers*, 1787.
"Ænigma, *Koch*," according to the cabinet of Mr. Cuming.

It is by no means certain that all the species here indicated are distinct, or are to be distinguished by the characters assigned to them, unassisted by the country which they inhabit: but they seem distinct, and it appears to be desirable that they should be distinguished until we have the means of more completely investigating them, and of examining and comparing the animals which form them.

* *The upper scar in dorsal valve large; two lower scars smaller, and nearly under the upper one. Shell suborbicular.* ANOMIA.

Anomia, *Gray, Proc. Zool. Soc.* 1849, 114.

† *European.*

1. ANOMIA EPHIPPIUM.

Shell white, yellow, rosy or red brown; upper valve radiated; internally pearly. The upper scar large, oblong, the two others rather smaller, subequal, one above the other; the lowest of the two rather more behind. Plug large, broad, short; the sinus in lower valve large.

Anomia Ephippium, *Linn. S. N.* 1150; *Chemn.* viii. 82, t. 76, f. 692, 693; *Mont. T. B.* 155; *Lamk. Syst.* 138; *Dillw. R. S.* i. 286; *Poli, Test.* ii. 186, t. 20, f. 9, 10; *Lamk. Hist.* vi. 226, 2 ed. vii. 273, n. 1; *Gray, P. Z. S.* 1849, 116.
Anomia Tunica Cepa, *Dacosta, B. Conch.* 165, t. 11, f. 3.
Anomia cepa, *Linn. S. N.* 1151; *Chemn.* viii. 85, t. 76, f. 694, 695; *Dillw. R. S.* i. 287; *Poli, Test.* ii. 182, t. 30, f. 1-8; *Lamk. H.* v. 227, 2 ed. vii. 274, n. 3.
Anomia violacea, *Brug. Enc. Meth.* 71.
Anomia plicata, *Brocch. Conch.* 665, t. 16, f. 9.
Anomia scabrella, *Philippi, Sicil.* i. 92, ii. 65, t. 18, f. 1.
Anomia polymorpha, *Philippi, Sicil.* i. 92, ii. 65.
Anomia costata, *Brocchi*, 463, t. 10, f. 9.

Anomia sulcata, *Poli, Test. Sicil.* t. 30, f. 12; *Brocch.* t. 10, f. 2.
Anomia radiata, *Brocchi*, t. 10, f. 10.
Anomia pectiniformis, *Poli, Sicil.* t. 30, f. 13, on a *Pecten*; *Philippi, Sicil.* ii. 63, t. 18, f. 3.
Anomia margaritacea, *Poli, Sicil.* t. 30, f. 11; *Philippi, Sicil.* ii. 63.
Anomia electrica, *Linn. S. N.* 1151; *Chemn. Conch.* viii. t. 76, f. 691; *Lamk. Hist.* vi. 227, 2 ed. vii. 274, n. 4.
Anomia squamula, *Linn. S. N.* 1151; *Chemn. Conch.* viii. 86, t. 76, f. 696; *Lamk. Hist.* vi. 228, 2 ed. vii. 275, n. 8.
Anomia punctata, *Chemn. Conch.* viii. 88, t. 77, f. 698; *Dillw. R. S.* ii. 288.
Anomia aculeata, *Müller, Z. D. Prod.* 249; *Chemn.* viii. 92, t. 77, f. 702; *Mont. T. B.* 157, t. 4, f. 5; *Dillw. R. S.* i. 288.
Anomia scabra, *Solander MSS.* fide *Dillwyn.*
Anomia lens, *Lamk. Hist.* vi. 228, 2 ed. vii. 276, n. 9.
? Anomia aspera, *Philippi, Sicil.* ii. 65, t. 18, f. 4.
Anomia elegans, *Philippi, Sicil.* ii. 65, t. 18, f. 2.
Anomia patelliformis, *Chemn. C.* viii. 89, t. 77, f. 700; *Dillw. R. S.* i. 290.
Anomia striatula, *Bruguière, Enc. Meth.* 74.
? Anomia bifida, *Chemn. Conch.* viii. 79, t. 76, f. 689, 690; *Dillw. R. S.* 290.
Anomia cylindrica, *Gmelin, S. N.* 3349; *Dillw. R. S.* i. 291.
Anomia cymbiformis, *Maton & Racket, Linn. Trans.* viii. 104, t. 3 f. 6; *Mont. Supp.* 64.
Anomia coronata, *Bean, Mag. N. Hist.*
Anomia patellaris, *Lamk. Hist.* 2 ed. vii. 273, n. 2; *Deles. Receuil*, t. 17, f. 3.
Anomia pyriformis, *Lamk. Hist.* vi. 227, 2 ed. vii. 175, n. 5; *Deles. Rec.* t. 17, f. 4.
Anomia fornicata, *Lamk. Hist.* vi. 228, 2 ed. vii. 275, n. 6 = *Enc. M.* t. 170, f. 45.
? Anomia membranacea, *Lamk. Hist.* vi. 228, 2 ed. vii. 275, n. 7 = *Enc. Meth.* t. 170, f. 1-3?
? Anomia cucullata, *Bruguière, E. M.* 70.

a, b, c, d. Adult. Europe.
e. Adult. From back of *Pecten.* Lower valve radiated. Europe.
f, g, h. Small, very convex. On *Cerithium vulgatum.* Malta. Presented by Miss Emilie Attersoll.
i. Small, very convex, obliquely costated from a costated shell. Malta. Presented by Miss E. Attersoll.
j. Shell thick, radiately striated. Coast of Africa. Presented by Capt. Owen, R.N.

†† *Asiatic.*

2. ANOMIA AMABÆUS.

Flat, white, smooth; internally pearly, with a very thin disk. Upper scar moderate; lower scars two, rather large (nearly as large as the upper one), confluent into a broad, oblong scar.

Anomia amabæus, *Gray*, *P. Z. S.* 1849, 113.

Hab. Philippines, Island Buraas (Jackass Island); on stones, sand, ten fathoms. Mr. Cuming's collection.

3. ANOMIA CYTÆUM.

Shell suborbicular, smooth; internally reddish. Upper muscular scars very large, subcordate; lower two, suborbicular, smaller, nearly equal-sized; the upper in the notch of the upper one; the lower hinder close to lower hinder edge of the upper one; sinus in lower valve large.

Anomia cytæum, *Gray*, *P. Z. S.* 1849, 115.

Hab. China, River Zangtze Keang; *Fortune.* Mr. Cuming's collection. Two specimens.

4. ANOMIA DRYAS.

Suborbicular, flat, white; upper valve internally and radiately lined. Upper scar large, oblong; lower scars two, small, circular, nearly confluent, placed side by side nearly on the same line.

Anomia Dryas, *Gray*, *P. Z. S.* 1849, 115.

Hab. Singapore. On dead shells, ten fathoms, in course sand and gravel. One small specimen. Mr. Cuming's collection.

5. ANOMIA ACHÆUS.

Shell purplish, smooth; umbo rather acute; upper valve generally convex; inside purplish white. Upper muscular scar large, lower edge slightly arched; lower scars two, small, nearly equal-sized; the hinder rather lower than the other.

Anomia achæus, *Gray*, *P. Z. S.* 1849, 115.

a, *b*, *c*, *d*, *e*, *f*. Dorsal valves only. Indian Ocean, Kurachee, mouth of the Indus. Presented by Major Baker.

Major Baker sent to the Museum a very large series of the dorsal valves of this species, collected at Kurachee. They are ex-

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tremely variable in form, surface, colour and thickness, and they also offer considerable variety in the disposition of the muscular scar. In all the upper scar is largest, but variable in shape from round to broad cordate. In most the two lower scars are close together, but separate, and nearly on the same line. In others the lower scar is rather lower than the middle one, and in a few (four) specimens, which are mostly produced posteriorly, the lower scar is much lower; that is to say, in some the upper edge is parallel with the lower edge of the middle one. In one specimen the two lower scars are on the same line, and are confluent together, forming a scar about the same size as the upper scar, yet showing that the lower scar is formed by two muscles; so that this valve cannot be confounded with a *Placunanomia*.

The examination of this series of specimens from the same locality I think shows, that though the comparative size and disposition of the scars may furnish good characters for the distinction of the species, yet they are not to be relied on.

6. ANOMIA BELESIS.

White or red; the upper part of the centre of the dorsal valve white, externally radiately striated; apex acute, at some distance from the dorsal edge. Upper valve with three separate scars, the upper one very large, oblong, and rather transverse; two lower ones very small, nearly equal-sized, and nearly on the same line.

Anomia belesis, *Gray*, *P. Z. S.* 1849, 116, *Moll.* t. 4, f. 3, 4.

a. White, rather thick. Indian Ocean. Presented by General Hardwicke.

b, *c*. Red. Indian Ocean. Presented by General Hardwicke. Specimen figured *P. Z. S.* 1849, t. 4, f. 3, 4.

††† *American.*

7. ANOMIA ACONTES.

Yellowish white, suborbicular, flat, smooth; disk pearly. Upper scar moderate, subcircular; lower scars smaller, distant, circular, subequal, the lower one nearly on a line with the lower edge of the middle one.

Anomia acontes, *Gray*, *P. Z. S.* 1849, 116.

Hab. Jamaica. One small specimen in Mr. Cuming's collection.

8. ANOMIA FIDENAS.

White, pearly, thin, flat, smooth externally, pearly within, with a thick white disk. Upper scar large, elongate, arched below; lower scars two, small, circular, far apart, the lower one considerably below the other.

Anomia fidenas, *Gray*, *P. Z. S.* 1849, 117.

Hab. America, west coast. Panama; on *Pinna* at low water. Mus. Cuming, no. 2; three specimens.

9. ANOMIA ADAMAS.

Red, thick, with numerous, indistinct, radiating ribs, most distinct on the edge of the lamina; internally red, pearly, with a small white disk. Upper muscular scar oblong, arched below; lower scars subequal, separate, but close together, and nearly on the same line.

Anomia adamas, *Gray*, *P. Z. S.* 1849, 117.

Hab. Galapagos; Lord Hood's Island, attached to *Avicula margaritifera* at nine fathoms. Mus. Cuming, no. 5; three specimens.

10. ANOMIA PACILUS.

Red, with distinct radiating ribs; internally reddish pearly, with a thick white disk. Upper muscular scar oblong, broad, lower edge arched; lower scars two, rather smaller, nearly similar in size, rather close together, but separate, the hinder one rather lower than the other.

Anomia pacilus, *Gray*, *P. Z. S.* 1849, 117.

Hab. Peru; Tumbez. Dredged from five fathoms in soft mud. Mus. Cuming, no. 9.

11. ANOMIA LARBAS.

Shell white, smooth, lower valve pale green. Upper muscular scar large; lower scars two, nearly as large as, and close to, the upper one, nearly equal, and nearly in a line.

Anomia larbas, *Gray*, *P. Z. S.* 1849, 117.

Hab. Coast of Peru, Payta. Mus. Cuming.

12. ANOMIA ALECTUS.

Irregular, upper valves convex, reddish, internally pearly; lower valve green, internally green. Upper scar large, oblong; lower scars two, large, rather smaller than the upper one, close together, but not confluent; the lowest one the largest.

Anomia alectus, *Gray*, *P. Z. S.* 1849, 117.

a. Dorsal valve. Peru, Bay of Guayaquil. Presented by R. B. Hinds, Esq.

b. Yellow, perfect. N. coast of America. Presented by Capt. Sir Edward Belcher, C.B., R.N.

13. ANOMIA HAMILLUS.

Reddish, thin, sinuous. Dorsal valve with a triangular, white, porcellaneous disk. Upper scar large, roundish; lower scars two, separate, close together, nearly equal-sized, small, and nearly on the same line.

Anomia hamillus, *Gray*, *P. Z. S.* 1849, 117.

Hab. West Columbia, Bay of Canes. Mus. Cuming, no. 6.

14. ANOMIA LAMPE.

Shell yellowish green, radiately costated; internally green. Upper muscular scar large, squareish; lower two rather smaller, subequal, near together and to the upper scar, and nearly on the same line; sinus in lower valve very large.

Anomia lampe, *Gray*, *P. Z. S.* 1849, 117.

a, *b*, *c*. Single valves, yellow and red. California. Presented by Lady Katherine Wigram.

†††† *Fossil.*

15. ANOMIA TENUISTRIATA.

Shell very variable in shape, regularly radiately striated; sinus of lower valve very large, ovate. Dorsal valve with three nearly equal muscular scars very close together; the two lower small, placed close together side by side, just on the lower margin of the upper scar, the hinder one being rather behind the hinder edge of the upper one.

Ostrea anomialis, *Lamk. Hist. An. sans Vert.* vi. 220.
Anomia Ephippium, *Defrance*, *Dict. Sci. Nat.* ii.

Anomia striatula, *Desh. Coq. Foss. Paris*, t. 65, f. 7, 11.
Anomia tenuistriata, *Desh. Coq. Foss. Paris*, i. 377, *in Lamk. Hist.* vii.; *Gray, P. Z. S.* 1849, 118.

a, *b*, *c*, *d*, *e*, *&c.* Fossil, Grignon. From M. Deshayes collection.

The very characteristic scars of the dorsal valve are well shown in M. Deshayes' plate above referred to, but not mentioned in the description.

** *Upper scar of dorsal valves large; two lower scars smaller, far behind the upper one. Shell oblong, transverse.* ÆNIGMA. *Koch.*

Ænigma, *Koch, MSS.*; *Gray, P. Z. S.* 1849, 118.

16. ANOMIA ÆNIGMATICA.

Shell elongate, transverse, oblong, purple or yellowish, with a purple disk; apex acute, considerably within the dorsal edge.

The upper scar large, suborbicular, subcentral; lower scars two, much more posterior, small, equal-sized, and nearly confluent.

Tellina ænigmatica, *Chemn. Conch.* xi. t. 199, f. 1949, 1950.
Anomia rosea, *Gray, Ann. Philos.* 1825, 5.
Anomia ænigmatica, *Alton in Wiegmann, Arch.* 1837, *Verz.* 21; *Reeve, Nomen. Conch.*; *Gray, P. Z. S.* 1849, 118.

Hab. Indian Ocean.

Var. 1. Elongate, purplish brown, smooth, flat. *Chemn. l. c.* f. 1949, 1950.

Hab. Indian Ocean, on the surface of flat wooden piles, &c.

a, *b*. Philippines. From Mr. Cuming's collection.

Var. 2. Like former, but more elongated, and the sides folded together, from being on a concave surface.

Anomia naviformis, *Jonas*; fide *Mus. Cuming.*
Ænigma, sp. *Koch*; fide *Mus. Cuming.*

c, *d*. Bengal, on wood.

Var. 3. Flat, smooth; like *Var.* 1, but yellow, with a dark purple brown, transverse ray.

e, *f*. Philippines. From Mr. Cuming's collection.

Var. 4. Flat, purple; like *Var.* 1, but often more ovate, and with a few radiating ribs, ending in projections, making the edge sinuous.

g. Singapore, on piles of wood forming the wharves. From Mr. Argent's collection.

*** *Two upper scars small; lower one large. Shell suborbicular; sinus small.* PATRO.

Patro, *Gray, Proc. Zool. Soc.* 1849, 118.

17. ANOMIA ELYROS.

White, lamellar, closely radiately striated. The disk of the upper valve with three separate subcircular scars; the two upper scars small, subequal, one under the other; the lower one large, nearly circular, subcentral. Notch in lower valve very small. Plug small, elongate, subcylindrical; the notch small, with reflexed edges.

Anomia elyros, *Gray, P. Z. S.* 1849, 118; *Moll.* t. 4, f. 1, 2.

a, b, c, d. Adult, thick; disk white, thick. Port Essington. Presented by the Earl of Derby.
e, f. Adult. Port Essington. Presented by J. B. Jukes, Esq.
g. Adult. Depuch Island. Presented by Capt. Wickham.
h. Adult, thin; disk thin. Port Essington. Presented by Capt. Sir Everard Home, Bart., R.N.

The small size of the upper scars in this species probably depends on the small size and elongated form of the plug. The other species, which have the upper scar the largest, have at the same time a larger notch and a broader plug.

3. LIMANOMIA.

Shell adherent, longitudinal, subequivalve, inequilateral; *umbo* curved to the right, regularly curved on each side, cardinal edge transverse, oblique, inclined to the right; valves thin near umbo, slightly radiately ribbed; lower valve with a subtriangular notch near the umbo, under the ear; cartilage ridge ? muscular scars ? *Plug* triangular, calcareous, with a narrow, scalariform impression.

Limanomia, *Bouchard, Chantereœux MSS.* (in letter) 1850.

This fossil genus, which has the external form of a *Lima* and the plug and habit of *Anomia*, has hitherto only been found in the Devonian limestone.

** Shells adherent, sometimes aggregate.*

1. LIMANOMIA GRAYIANA.

Shell ovate, longitudinal, radiated and dichotomously ribbed; ribs of upper valve strong, under far apart, of lower valve flat, broad and near together.

Limanomia Grayiana, *Bouchard MSS. & figure.*

Fossil. Devonian limestone, Boulogne.

See also Limanomia multicosta, and L. Lineolaria.

*** Shell isolated, attached to Terebratula or Spirifer.*

2. LIMANOMIA GIBBA.

Shell orbicular, gibbous; upper valve very concave, cancellated, concentrically ribbed, and finely undulately radiated; lower valve smooth, concave in the centre.

Limanomia gibba, *Bouchard MSS.*

Fossil. Devonian limestone, Boulogne.

Printed by E. Newman, 9, Devonshire Street, Bishopsgate.

NOMENCLATURE

OF

MOLLUSCOUS ANIMALS

AND SHELLS

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

PART I. CYCLOPHORIDÆ.

PRINTED BY ORDER OF THE TRUSTEES.

LONDON: 1850.

LONDON:
SPOTTISWOODES and SHAW,
New-street-Square.

PREFACE.

THE object of this Nomenclature is to present a Catalogue of the well-established Species of Mollusca, with references to where they are described and figured, and to the most important synonyma; to give a List of the Specimens contained in the Museum collection, with an indication of their habitat and origin; and to point out the Desiderata of that collection at the period of publication.

The list must only be considered as prefatory to a more comprehensive Catalogue.

JOHN EDWARD GRAY.

British Museum,
March, 1850.

LIST OF CYCLOPHORIDÆ.

Fam. I. CYCLOPHORIDÆ.

Mollusca phaneropneumona *Gray*, *Lond. Med. Rep.* 1821.
M. pneumonopoma *Latr.*
Cyclostomina *M. Edwards.*
Cyclostomoidea *Fitzinger*, *Syst. Verz.* 115. 1833.
Cyclostomaceen *Pfeiffer*, *Menke und Pfeiffer*, *Zeitsch. für Malak.* 1847, 101.
Cyclophoridæ *Gray*, *Proc. Zool. Soc.* 1847, 181.
Cyclostomidæ *Gray*, *Turton. Man.* ed. 2. 102. 273. (1840).
Cyclostomidæ (pars) *D'Orb. Moll. Canar.* 1837 ?, *Moll. Cuba*, i. 199. 236. 1841
Cyclostomacea *Menke*, *Syn.* ed. 2. 39. 1830; *Pfeiffer*, *Symb. Hist. Helic.* i. 4. 1841, in *Chemn. Conch.* ed. 2. i. 19. 7. 1846.
Cyclostomacea (pars) *Anton. Verz.* xiii. 52. 1839; *Reeve*, *Conch. Syst.* ii. 90.
Cyclostomiatæ *Menke*, *Syst.* 22. 1828.
Turbinina *Férussac*, *Prod.*
Turbinacea (pars) *Rafin. Annal. Nat.* 144. 1815.

A. *Operculum orbicular often concave externally, of many very gradually enlarging whorls, nucleus central.*

a. *Operculum thick, formed of two laminæ, with a groove on the edge between them; the outer layer calcareous, usually furnished with a raised border on the outer edge, forming a spiral ridge or fringe.*

1. CYCLOTUS.

Operculum thick, testaceous; outer surface rather concave; whorls numerous, very gradually enlarging, fringed.—*Shell* subturbinate, depressed or discoidal. Mouth simple, or with a reflexed outer lip. Peristome continued, or joined by a callous margin; straight or reflexed.

Cyclotus *Guild.* in *Swains. Malac.* 1840, 186.; *Gray, Syn. B. M.* 1842, 9., *Proc. Zool. Soc.* 1847, 182.; *Hermann. Ind. Gen. Moll.* i. 350.

Aperostoma *Troschel, Zeitsch. f. Malak.* 1847, 44.; *Pfeiffer* in *Menke und Pfeiffer's Zeitsch. f. Malak.* 1847, 104.

β. Poteria *Gray, Syn. B. M.* 1840.

§ *Whorls in front of the axis rounded.*

* *Whorls of operculum very narrow. Peristome nearly straight.*

† *Whorls of shell near suture simple.*

1. Cyclotus giganteus.

Cyclostoma giganteum *Gray, MS. Brit. Mus.; Sow. Proc. Zool. Soc.* 1843, 30., *Thes. Conch.* i. 92. n. 5. t. 23. f. 8, 9.; *Pfeiffer, Küster, Chemn. Conch. Cab.* 11. n. 2. i. 19. t. 1. f. 11—14.; *Reeve, Conch. Syst.* t. 184. f. 17.

Cyclost. Cumingii? *Jay, Cat. of Shells*, t. 7. f. 4, 5.

Aperostoma giganteum *Pfeiffer, Zeit. Mal.* 1847, 104. n. 1.

a. Adult. S. America.

b. St. Elena, W. Columbia. Adult; weathered. Presented by R. B. Hinds, Esq.

2. Cyclotus cingulatus.

Cyclost. cingulatum *Sow. Thes. Conch.* i. 93. n. 9. t. 29. f. 213, 214.; *Pfeiffer, Küster, Chemn. Conch. Cab.* i. 19. t. 22. f. 20—22.

Aperostoma cingulatum *Pfeiffer*, l. c. 104. n. 2.

Hab. New Granada.

3. Cyclotus Inca.

Cyclost. Inca *D'Orb. Mag. de Zool.* 1835, 29., *Amér. Mérid.* 361. t. 16. f. 21—23.; *Sow. Thes. Conch.* i. 92. n. 6. t. 24. f. 71, 72.; *Pfeiffer, Küster, Chemn. Conch. Cab.* xii. n. 3. 1. 19. t. 1. f. 5—7.

Cyclost. Blanchetianum *Moricand, Mém. de Genève*, vii. 1836, 442. t. 2. f. 21—23.; *Potiez et Mich. Gal. de Douai*, 233. t. 23. f. 21, 22.; *Lamck. An. s. Vert.* 2d. edit. viii. 366. n. 29.

Cyclost. nobile *Fér. Mus.* (fide *Potiez et Mich.*)

Aper. Inca *Pfeiff.* l. c. 104. 48.

a—e. Bolivia, Yungas.

4. Cyclotus brasiliensis.

Cyclost. Brasiliense *Sow. Thes. Conch.* i. 92. n. 4. t. 23. f. 7.; *Pfeiffer, Küster, Chemn. Conch. Cab.* i. 19. t. 12. f. 13—15.

? Cyclost. prominulum *Férus.*
Aper. Brasiliense *Pfeiff.* l. c. 104. n. 12.

a, *b*. Rio Janeiro. Presented by J. E. Gray, Esq.

5. CYCLOTUS? DUFFIANUS.

Cyclost. Duffianum *Adams.*
Aper. Duffianum *Pfeiff.* l. c. 104. n. 9.

Hab. Jamaica.

6. CYCLOTUS STRAMINEUS.

Cyclost. stramineum *Reeve*, *Proc. Zool. Soc.* 1843, 41.; *Sow. Thes. Conch.* i. 93. n. 8. t. 29. f. 211, 212.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 94. n. 90. i. 19. t. 12. f. 6, 7.
Aper. stramineum *Pfeiff.* l. c. 104. n. 11.

Hab. Merida, in the Columbian Andes.

7. CYCLOTUS PLEBEJUS.

Cyclost. plebeium *Sow. Proc. Zool. Soc.* 1843, 60., *Thes. Conch.* i. 94. n. 12. t. 25. f. 40.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 56. n. 50. i. 19. t. 7. f. 14, 15.
Aper. plebejum *Pfeiff.* l. c. 104. n. 15.

a—*c*. Calauang in Luçon. From Mr. Cuming's Collection.

†† *Whorls of shell with a ridge near the suture.*

8. CYCLOTUS SUTURALIS.

Cyclost. suturale *Sow. Thes. Conch.* i. 91. n. 1. t. 23. f. 1, 2.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 12. f. 10—12.
Aper. suturale *Pfeiff.* l. c. 104. n. 14.

a. Demerara.
b—*f*. Jamaica. Presented by the Rev. Barham Zincke.

** *Whorls of operculum very narrow. Peristome double; inner lip simple, outer expanded.* — Cyclotus *Swains.*, passing to Pterocyclos.

9. CYCLOTUS DISTOMELLUS.

Cyclost. distomella *Sow. Thes. Conch.* i. 114. n. 68. t. 25. f. 94.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 95. n. 91. i. 19. t. 12. f. 4, 5. t. 28. f. 14, 15.
Aper. distomella *Pfeiff.* l. c. 184. 16.

a, *b*. ——— ?
c. Var. small. —— ?

10. CYCLOTUS HEBRAICUS.

Valvata hebraica *Lesson, Voy. Coquille, Zool.* ii. 347. t. 13. f. 8.
Cyclost. distomella *Pfeiffer, Kuster, Chemn. Conch. Cab.* 95. n. 91.
Cyclost. papua *Quoy & Gaim. Voy. Astr.* ii. 185. t. 12. f. 23—26.
Aper. hebraicum *Pfeiff.* l. c. 104. 17.

Hab. New Guinea?

11. CYCLOTUS DISCOIDEUS.

Cyclost. discoideum *Sow. Thes. Conch.* i. 111. n. 60. t. 25. f. 87, 88.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 1—3.
Aper. discoideum *Pfeiff.* l. c. 104. 19.

Hab. Demerara.

12. CYCLOTUS MUCRONATUS.

Cyclost. mucronatum *Sow. Proc. Zool. Soc.* 1843, 63., *Thes. Conch.* i. 113. n. 66. t. 25. f. 91.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 58. n. 52. i. 19. t. 7. f. 11—13.
Aper. mucronatum *Pfeiff.* l. c. 104. 20.

a—i. Calauang in Luçon. From the Collection of Mr. Cuming.

13. CYCLOTUS? ATRAMENTARIUS.

Cyclost. atramentarium *Sow. Thes. Conch.* i. 128. n. 105. t. 30. f. 236.; *Pfeiffer*, l. c. 106. 78.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 18. f. 17, 18.

Hab. ——?

14. CYCLOTUS PLANORBULUS.

Cyclost. planorbulum *Lamck. Enc. Méth.* t. 461. f. 3., *An. s. Vert.* 2d ed. viii. 353. n. 1.; *Sow. Thes. Conch.* i. 110. n. 58. t. 25. f. 83—86.; *Desh. Enc. Méth. Vers.* ii. 39. n. 1.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 22. f. 6—16.
Cornu venatorium *Chemn. Conch. Cab.* ix. 104. t. 127. f. 1132—1133.; *Gmel. Syst. Nat.* 3641. n. 227.?; *Petiver, Gazoph.* t. 1. f. 6.
Aper. planorbulum *Pfeiff.* l. c. 104. n. 18. a. b.
Cyclot. planorbulus *Gray, Proc. Z. Soc.* 1847, 182.

a. Philippine Islands. Large.
b—d. Philippine Islands. Small. From the Collection of Mr. Cuming.

15. CYCLOTUS RUPESTRIS.

Pterocyclos rupestris *Hutton's MSS. B. M.*; *Benson.*

a, *b*. India.

*** *Whorls of operculum, very narrow. Peristome simple, reflexed.*

16. CYCLOTUS SUBSTRIATUS.

Cyclost. substriatum *Sow. Proc. Zool. Soc.* 1843—61., *Thes. Conch.* i. 113. n. 67. t. 25. f. 35.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 57. n, 51., i. 19. t. 7. f. 18—29.

Aper. substriatum *Pfeiff.* l. c. 104. n. 21.

a—c. Island of Siquijor. From the Collection of Mr. Cuming.

17. CYCLOTUS EXIGUUS.

Cyclost. exiguum *Sow. Thes. Conch.* i. 112. n. 63. t. 25. f. 92.

Aper. exiguum *Pfeiff.* l. c. 104. n. 23.

Hab. ——?

18. CYCLOTUS PUSILLUS.

Cyclost. pusillum *Sow. Proc. Zool. Soc.* 1843, 9., *Thes. Conch.* i. 94. n. 10. t. 23. f. 5. 5.*; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 59. n. 53. i. 19. t. 7. f. 16—17.

Aper. pusillum *Pfeiff.* l. c. 104. n. 22.

a—f. Isle of Luçon. From the Collection of Mr. Cuming.

g—i. Philippine Islands. Var. small. From the Collection of Mr. Cuming.

19. CYCLOTUS MEXICANUS.

Cyclost. Mexicanum *Menke, Synops.* 1830, 135.; *Sow. Thes. Conch.* i. 112. n. 64. t. 25. f. 93.; *Philippi, Abbild. und Beschr. Conch.* i. 104. t. 1. f. 4; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 56. n. 49. i. 19. t. 7. f. 21—22.

Aper. Mexicanum *Pfeiffer*, l. c. 104. n. 10.

a. Mexico. Presented by J. E. Gray, Esq.

20. CYCLOTUS PFEIFFERI.

a. With operculum. ——? Presented by J. E. Gray, Esq.

21. CYCLOTUS? ORBELLUS.

Cyclost. orbella *Lamck. An. s. Vert.* vi. 148. 2d ed. viii. 360. n. 22., *De Lessert, Rec. Coq.* t. 29. f. 13.; *Sow. Thes. Conch.* i. 93. n. 7. t. 23. f. 6.* 6.**; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 4—6.

Cyclost. variegatum *Férussac.*
Cycloph.? orbellus *Pfeiffer*, l. c. 108. n. 38.

a. ——?

**** *Whorls of operculum rather wide. Peristome straight.* — Passing to Tropidophora.

22. CYCLOTUS TRANSLUCIDUS.

Cyclost. translucidum *Sow. Proc. Zool. Soc.* 1843, 29. 106. n. 46., *Thes. Conch.* t. 23. f. 4.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 13. n. 4. i. 19. t. 1. f. 8—10.
Aper translucidum *Pfeiff.* l. c. 104. n. 5.

a—f. ——?
g—i. Central America. From the Collection of Mr. Cuming.

23. CYCLOTUS INCONSPICUUS.

Cyclost. Popayanum *Lea, Obs. on the genus Unio*, ii. 94. t. 23. f. 76.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 55. n. 48. i. 19. t. 7. f. 7—10.
Cyclost. inconspicuum *Sow. Thes. Conch.* i. 109. n. 56. t. 24. f. 73., 74.
Aper. Popayanum *Pfeiff.* l. c. 104. n. 6.

a, b. New Granada.

24. CYCLOTUS ASPERULUS.

Pyxis sp. *Humph. MS.*
Cyclost. asperulum *Sow. Thes. Conch.* i. 91. n. 2. t. 23. f. 3.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 16—17.
Aper.? asperulum *Pfeiff.* l. c. 104. n. 7.

a—c. Jamaica. From the Collection of Mr. Cuming.

25. CYCLOTUS CONOIDEUS.

Cyclost. conoideum *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 13. f. 19—21.
Cyclost. spurcum *Sow. Thes. Conch.* i. 99. n. 26. t. 24. f. 75, 76.
Trop. conoidea *Pfeiff.* l. c. 107. n. 15.

a, b. S. America (collected by Capt. Fitzroy, R.N.). Presented by J. E. Gray, Esq.

26. CYCLOTUS SEMISTRIATUS.

Cyclost. semistriatum *Sow. Thes. Conch.* i. 19. n. 3. t. 23. f. 6.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 10—12.

Cyclost. fasciatum *Hutton, MS. B. M.*
Cyclost. albus *Hutton, MS. B. M.*
Aper. semistriatum *Pfeiff.* l. c. 104. n. 13.

a—c. Banks of Ganges.

§§ *Whorls in front of axis keeled. Peristome straight.*—Poteria *Gray, Syn. Brit. Mus.* 1840, 1842, 91.

27. CYCLOTUS LINEATUS.

Cyclostoma jamaicense *Sow. Thes. Conch.* i. 96. n. 15. t. 23. f. 12, 13., not Gray.
Aper. jamaicense *Pfeiff.* l. c. 104. n. 3.

a. Jamaica.
b, c. Jamaica. Presented by Rev. Barham Zincke.

28. CYCLOTUS JAMAICENSIS.

Cyclost. corrugatum *Menke, Cat. Malak.* 10.; *Sow. Proc. Zool. Soc.* 1843, 30., *Thes. Conch.* i. 95. t. 23. f. 10, 11.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 17. n. 8. i. 19. t. 2. f. 13, 14.
Turbo jamaicensis *Chemn. Conch.* xi. t. 209. f. 2057, 2058.
T. (Cyclostoma) jamaicensis *Gray* in *Wood's Cat. Supp.* t. 6. f. 3.; *Lister, Conch.* t. 55. f. 51.; *Sloane, Jamaica*, ii. t. 240. f. 84.
Aper. corrugatum *Pfeiff.* l. c. 104. n. 4.

a—h. Jamaica.
i—k. Jamaica. Presented by Professor C. B. Adams.
l, m. Jamaica. Var. with operculum ridges higher. Presented by Rev. Barham Zincke.

2. PTEROCYCLOS.

Operculum shelly, many whorled, spirally lamellated, externally very convex, internally concave. — *Shell* broadly umbilicated, rather discoidal. Peristome double; the internal short, cut on the right margin, the external dilated above into a roof-shaped beak.

Spiraculum *Pearson, Journ. As. Soc. Bengal*, ii. 590. 1833 ?
Steganotoma *Troschel, Wiegm. Arch.* 163, 1837 ; *Philippi, Abbild. und Besch.* 1844.
Pterocyclos *Benson, Journ. Asiat. Soc. Beng.* 1832, i. 11., *Zool. Jour.* v. 462. 1834; *Gray, Syn. B. M.* 1840, 133., 1842, 91, *Proc. Zool. Soc.* 1847, 182.; *Troschel, Menk. Z. f. Malak.* 1847, 44.; *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847.
Cyclostoma sp. *Sow. Thes. Conch.*

§ *Periostraca spinulose. Mouth with a reflexed lobe near the suture.*

1. PTEROCYCLOS PRINSEPSI.

Pterocyclos Princepsi *Von Busch* in *Pfeiffer*, l. c. 111. n. 3.; *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 24. f. 7. 10.
Steganotoma Princepsi *Von Busch* in *Philippi*, *Conch. Abbild.* 10. t. 1. f. 6.

a. India. Presented by Dr. Horsfield.

2. PTEROCYCLOS HISPIDUS.

Cyclost. spiraculum *Sow. Thes. Conch.* i. 110. n. 59. t. 31. f. 270—272.
Spiraculum hispidum *Pearson*, *Jour. Asiat. Soc. Bengal*, ii. 591. 1833.
Pterocyclos hispidus *Benson*, *MSS.*

Hab. India. Perhaps the same as the preceding.

§§ *Periostraca smooth. Mouth with a hole near the suture.*

3. PTEROCYCLOS RUPESTRIS.

Steganotoma pictum *Troschel*, *Philippi*, *Conch. Abbild.* 105. t. 1. f. 5.
Spiraculum parvum *Pearson*, *Jour. As. Soc. Beng.* ii. 592. 1833.
Cyclostoma spiraculum var. *f. Sow. Thes. Conch.* f. 273.
Pterocyclos anguliferus *Pfeiffer*, l. c. 111. n. 2.; *Kuster*, *Chemn. Conch.* i. 19. t. 24. f. 3. 6.
P. rupestris *Benson*, *J. A. S. Beng.* i. 13. t. 2. f. 1.; *Pearson*, l. c. 592.
Cyclostoma anguliferum *Souleyet.*

a—c. India.
d—f. Ceylon. Presented by H. L. Layard, Esq.
g. Ceylon. Var. Presented by H. L. Layard, Esq.

§§§ *Uncertain.*

4. PTEROCYCLOS ALBERSI.

P. Albersi *Pfeiffer*, l. c. 111. n. 5. and 151. n. 18.

Hab. —— ?

5. PTEROCYCLOS PICTUS.

P. pictus *Trosch.*; *Pfeiffer*, l. c. 111. n. 4.; *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 24. f. 21—25.

Hab. —— ?

Appears to be the same as *Cyclotus planorbulus jun.*

6. PTEROCYCLOS BILABIATUS.

Cyclostoma bilabiatum *Sow. Thes. Conch.* 1. 110. n. 57. t. 25. f. 81—82.

Pterocyclos bilabiatus *Benson* (in *Sow.*); *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 24. f. 11—14.; *Pfeiffer*, l. c. 111. n. 1.

Hab. Salem near Madras.
Near *Cyclotus planorbulus*.

3. CRASPEDOPOMA.

Operculum horny, solid; whorls very narrow, with a central nucleus; external plate flat; internal concave, furnished with a circular marginal prominence.—*Shell* subturbinate, gaping; last whorl slightly produced, straight. Mouth circular, rather contracted. Peristome continuous, simple, receiving the external prominence of the operculum. Axis imperforate.

Craspedopoma *Pfeiffer* in *Menke und Pfeiffer*, *Z. f. Malak.* 1847, 48. 107.
Cyclostoma sp. *Lowe.*
Valvata sp. *Menke.*
Bolania *Gray*, *Syn. B. M.* 1842, 91., not described.

§ *Last whorl slightly produced.*

1. CRASPEDOPOMA LUCIDUM.

Cyclostoma lucidum *Lowe*, *Moll. of Madeira*, *Trans. Camb. Phil. Soc.* 1831, 66. t. 6. f. 40.; *Lamck. An. s. Vert.* 2d ed. viii. 369. n. 36.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 13. f. 26, 27.
Valvata turbinata *Menke?*
Craspedopoma lucidum *Pfeiffer*, l. c. 111. n. 1.
Bolania lucida *Gray*, *B. M.* 1840.

a—f. Madeira. Presented by Rev. R. T. Lowe.
g—t. Madeira. Presented by T. V. Wollaston, Esq.
u—z. Madeira. Fossil. Recent limestone formation. Presented by T. V. Wollaston, Esq.

§§ *Last whorl much produced, straight.*

2. CRASPEDOPOMA LYONNETIANUM.

Cyclostoma Lyonnetianum *Lowe MS.* fide Wollaston.

a—r. Madeira, wet rocks. Presented by T. V. Wollaston, Esq.
s—x. Madeira. Fossil. Recent limestone formation. Presented by T. V. Wollaston, Esq.

b. *Operculum horny, thin without any external calcareous layer. Shell conical or depressed. Last whorl rounded, without any groove or ridge round the front of the axis.*

4. AULOPOMA.

Operculum horny, with many whorls; outer edge larger than the aperture, and reflexed over the peristome of the shell. — *Shell* turbinate, depressed, or subdiscoidal, the last whorl anteriorly open; peristome free, straight, continuous, immersed in the circular groove of the operculum.

Aulopoma *Troschel* in *Menke und Pfeiffer, Z. f. Malak.* 1847, 43.; *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847.

1. AULOPOMA CORNU VENATORIUM.

Cyclostoma cornu venatorium *Sow. Thes. Conch.* i. 107. n. 48. t. 24. f. 41—42.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 22. f. 1—3.

Aulopoma cornu venatorium *Pfeiffer*, l. c. 111. n. 1.

a. Ceylon.
b—f. Ceylon.
g—l. Ceylon. Presented by H. L. Layard, Esq.
m—q. Ceylon. Var. small. Presented by H. L. Layard, Esq.
r—s. Ceylon. With operculum. Presented by H. L. Layard, Esq.

2. AULOPOMA HELICINUM.

Cyclost. helicinum? *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 22. f. 4, 5.

A.? helicinum *Pfeiffer*, l. c. 111. n. 2.

Hab. —— ?

3. AULOPOMA ITIERII.

A. Itierii *Guér.; Pfeiffer*, l. c. 111. n. 3.

Hab. —— ?

4. AULOPOMA HOFFMEISTERI.

A. Hoffmeisteri *Trosch.; Pfeiffer*, l. c. 111. n. 4.

Hab. —— ?

5. MYXOSTOMA.

Operculum thick, lamellar, subcartilaginous, many-whorled.— *Shell* widely umbilicated, depressed. Peristome double; the internal continuous, entire; the external reflexed, with a beak behind closely pressed to the last whorl.

Myxostoma *Troschel* in *Menke, Zeitsch. f. Malak.* 1847, 44.; *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847; *Gray, Proc. Zool. Soc.* 1847, 182.

Lituus *Martyn, U. C.* 1784; *Humph. Mus. Calonn.* 1797, not Breyn, 1732; *Gray, Proc. Zool. Soc.* 1847, 182.

1. MYXOSTOMA BREVE.

Lituus breve *Martyn, Un. Conch.* t. 28.

Cyclost. Petiverianum *Gray, Wood's Cat. Supp.* t. 6. f. 2.; *Sow. Thes. Conch.* 1. 116. n. 74. t. 25. f. 100, 101.

Cyclost. breve *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 24. f. 1, 2.

Myxostoma breve *Pfeiffer*, l. c. 111. n. 1.

a. —— ?

6. CYCLOPHORUS.

Operculum horny, thin, closely whorled, more or less concave externally.—*Shell* globose, turbinate; either depressed or discoidal. Peristome continuous; expanded or straight.

Cyclophorus *Montf. Conch. Syst.* ii. 290. 1810; *Blainv. Man. Malac.* 435. 1825; *Gray, Proc. Zool. Soc.* 1847, 182.; *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847, 106.

Cyclophora *Swains. Malac.* 185. 336. 1840.

Annularia *α Schum. Ess.* 1817.

Annularia *Gray, Syn. B. M.* 1842, 91.

§ *Turbinate.*

* *Axis umbilicated, open.*

1. CYCLOPHORUS AURANTIACUS.

Cyclost. aurantiacum *Pfeiffer, Kuster, Chemn. Conch. Cab.* 31. n. 22. t. 4. f. 8, 9., i. 19. t. 23. f. 45.

Cyclost. pernobile *Gould, Bost. Jour.* 1844, 458. t. 24. f. 11.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 30. n. 21. i. 19. t. 3. f. 15.

Annularia aurantiaca *Schum. Nouv. Syst.* 196.

Turbo volvulus var. *Chemn.* ix. 58. t. 123. f. 1064, 1065.

Helix volvulus γ *Müll. Hist. Verm.* ii. 83.

Cycloph. aurantiacus *Pfeiffer*, l. c. 107. n. 1.

Hab. Burmah ?

2. CYCLOPHORUS SPECIOSUS.

Cyclostoma speciosum *Philippi, Zeitsch. für Malak.* 1847, 123. n. 60.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 25. f. 1—3.

Cycloph. speciosus *Pfeiffer*, l. c. 107. n. 2.

Hab. —— ?

3. CYCLOPHORUS TUBA.

Cyclost. tuba *Sow. Zool. Proc.* 1842, 83., *Thes. Conch.* i. 122. n. 91. t. 27. f. 129, 130.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 23. f. 10, 11.

Cycloph. tuba *Pfeiffer*, l. c. 107. n. 3.

a—c. Malacca. From the Collection of Mr. Cuming.

4. CYCLOPHORUS PERDIX

Cyclost. perdix *Brod. & Sow. Zool. Journ.* v. 50., *Thes. Conch.* i. 122. n. 90. t. 27. f. 127, 128.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 60. n. 55. i. 19. t. 8. f. 7—9.

Cyclost. variegatum *Valenc.* in *Mus. Paris; Philippi, Abbild. und Besch. Conch.* i. 5. 104. t. 1. f. 3.

Cycloph. perdix *Pfeiffer*, l. c. 107. n. 4.

Hab. Tenasserim.

5. CYCLOPHORUS VALIDUS.

Cyclost. validum *Sow. Proc. Zool. Soc.* 1842, 82., *Thes. Conch.* i. 123. n. 93. t. 27. f. 132, 133.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 89. n. 85. i. 19. t. 11. f. 9, 10., t. 16. f. 15, 16.

Cycloph. validus *Pfeiffer*, l. c. 107. n. 5.

a—d. Philippine Islands. From the Collection of Mr. Cuming.

e. Philippine Islands. Var. From the Collection of Mr. Cuming.

f—i. Philippine Islands. Var. minor. From the Collection of Mr. Cuming.

6. CYCLOPHORUS AQUILA.

Cyclost. aquilum *Sow. Proc. Zool. Soc.* 1843, 61., *Thes. Conch.* i. 123. n. 92. t. 27. f. 131.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 14. n. 5. i. 19. t. 2. f. 1, 2. i. 19. t. 8 f. 1, 2.

Cycloph. aquila *Pfeiffer*, l. c. 107. n. 6.

a, b. Singapore. From the Collection of Mr. Cuming.

c. Singapore. Presented by the Earl of Derby.

d, e. China. Presented by G. Tradescant Lay, Esq.

7. CYCLOPHORUS VOLVULUS.

Cyclost. volvulus (pars) *Lamck. An. s. Vert.* 2d ed. viii. 353., *Encyc. Méth.* t. 461. f. 5. a, b.; *Sow. Thes. Conch.* i. 121. n. 89. t. 26. f. 126.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 27 n. 19. i. 19 t. 3. f. 1, 2. t. 4. f. 3, 4.; *Desh. Enc. Méth. Vers.* ii. 39. n. 2.; var. *Grat. Act. Soc. Linn. Bord.* xi. 435. t. 3. f. 1.

Cyclost. lævigatum *Voigt, Uebers. v. Cuvier*, iii. 178.
Helix volvulus *Müll. Verm.* ii. 82. n. 280.; *Born, Test.* 379. t. 14. f. 23, 24.; *Wood, Ind. Test.* t. 32. f. 7.; *Gmel. Syst. Nat.* 36. 38. n. 91.
Lituus *Martyn, Un. Conch.* t. 27.; *Lister*, t. 50. f. 48.
Cycloph. volvulus *Pfeiffer*, l. c. 107. n. 7.; *Montfort, Conch.* ii. 291. t. 73.? *Swainson, Malacology* 336.?

a—c. ——?
d. Mandoo, India (Cyclost. variata *Boys MS.*). From the Collection of Capt. Boys.
e. Moluccas. Var. From the Collection of Mr. Cuming.
f—h. Vars. ——?
i, j. India. Var. (variegated). Presented by Dr. Horsfield.

8. CYCLOPHORUS INVOLVULUS.

Cyclost. involvulus *Gray, Mus. Brit.*; *Sow. Thes. Conch.* i. 119. n. 82. t. 26. f. 114—116.; *Benson, Zool. Journ.* v. 462.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 28. n. 20. i. 19. t. 4. f. 3, 4. t. 8. f. 10—12.
Cyclost. volvulus *Lamck. An. s. Vert.* 2d ed. viii. 353., *Enc. Méth.* ii. 39. n. 2.
Turbo volvulus *Chemn.* ix. 57. t. 123. f. 1066.
Helix involvulus *Müll. Hist. Verm.* ii. 84. n. 281.
Helix volvulus *Wood, Ind. Test.* t. 32. f. 7.; *Seba, Thes.* iii. t. 40. f. 18, 19.; *Lister*, t. 75. f. 75.
Cyclophora involvula *Swainson, Malacology*, 336.
Cycloph. involvulus *Pfeiffer*, l. c. 108. n. 27.

a—c. Malacca. From the Collection of Mr. Cuming.
d—h. Bengal.
i, k. India. Presented by Rev. R. Everest.
l, m. Mandoo (Cyclost. picta *Boys MSS.*). From the Collection of Capt. Boys.
n—p. Bumourie. From the Collection of Capt. Boys.
q. Var. white. *r, s.* Var. red mouth. *t.* Var. red mouth, strongly keeled. *u—w.* Var. red mouth, strongly ribbed, ribs distant (bad state). India. From the Collection of Capt. Boys.
x. Rajmahal. Var. red mouth, lineated. From the Collection of Capt. Boys.
y—hh. Ceylon. Presented by H. L. Layard, Esq.

9. CYCLOPHORUS STENOMPHALUS.

Cyclostoma stenomphalum *Pfeiffer, Zeitsch. Malak.* 1846, 44.; *Kuster, Chemn. Conch. Cab.* 59. n. 54. i. 19. t. 8. f. 5, 6.
Cycloph.? stenomphalus *Pfeiffer*, l. c. 107. n. 8.

Hab. ——.

10. CYCLOPHORUS MENKEANUS.

Cyclost. Menkeanum *Philippi*, *Zeitsch. für Malak.* 1847, 123. n. 61.
Cycloph. Menkeanus *Pfeiffer*, l. c. 107. n. 9.

Hab. ——?

11. CYCLOPHORUS PUNCTATUS.

Cyclost. punctata *Grat. Act. Soc. Linn. Bord.* xi. 440. t. 3. f. 10.
Cyclost. punctatum *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 40. n. 31. i. 19. t. 5. f. 12, 13.
Cyclost. irroratum *Sow. Proc. Zool. Soc.* 1843, 11., *Thes. Conch.* i. 123. n. 94. t. 27. f. 134, 135.
Cycloph.? punctatus *Pfeiffer*, l. c. 107. n. 11.

a—h. Madagascar.
i—j. China. Presented by R. B. Hinds, Esq.

12. CYCLOPHORUS SOWERBYI.

Cyclost. megacheilus *Sow. Thes. Conch.* i. 131. n. 114. t. 31. f. 276.
Cycloph. Sowerbyi *Pfeiffer*, l. c. 107. n. 12.; *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 19. f. 10—12.

a, *b.* ——? Presented by Miss Saul.

13. CYCLOPHORUS TIGRINUS.

Cyclost. tigrinum *Sow. Zool. Proc.* 1843, 30., *Thes. Conch.* i. 126. n. 100. t. 29. f. 201—204.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 61. n. 56. i. 19. t. 8. f. 13—16., t. 16. f. 17—20.; *Reeve*, *Conch. Syst.* t. 183. f. 10.
Cycloph. tigrinus *Pfeiffer*, l. c. 107. n. 13.

a—h. Philippine Islands. From the Collection of Mr. Cuming.
i. India. Presented by G. B. Sowerby, Esq.
j. Var. *k*, *l.* Var. Philippine Islands. From the Collection of Mr. Cuming.
m, *n.* Philippine Islands. Var. red mouth. From the Collection of Mr. Cuming.

14. CYCLOPHORUS GUIMARASENSIS.

Cyclost. Guimarasense *Sow. Thes. Conch.* i. 131. n. 115. t. 31. f. 274, 275.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 12. f. 8, 9.
Cycloph. Guimarasensis *Pfeiffer*, l. c. 109. n. 13.

a—c. Isle of Guimaras. From the Collection of Mr. Cuming.

15. CYCLOPHORUS ZEBRA.

Cyclost. zebra *Grat. Kuster, Chemn. Conch. Cab.* i. 19. t. 13. f. 30, 31.
Cycloph. zebra *Pfeiffer*, l. c. 107. n. 16.

Hab. —— ?

16. CYCLOPHORUS PHILIPPINARUM.

Cyclost. Philippinarum *Sow. Zool. Proc.* 1842, 83., *Spec. Conch.* ii. f. 180—183. ? *Thes. Conch.* i. 125. n. 99. t. 29. f. 205—207.; *Pfeiffer, Kuster, Conch. Cab.* 42. n. 23. i. 19. t. 5. f. 17, 18. t. 13. f. 32—34.
Cycloph. Philippinarum *Pfeiffer*, l. c. 107. n. 17.

a—l. Philippine Islands. From the Collection of Mr. Cuming
m—o. Philippine Islands. Var. white bands. From the Collection of Mr. Cuming.
p—u. Philippine Islands. Var. small. From the Collection of Mr. Cuming.

17. CYCLOPHORUS TURBINATUS.

Cyclost. turbinatum *Pfeiffer, Kuster, Chemn. Conc. Cab.* i. 19. t. 13. f. 19—21.
Cyclost. helicoides *Sow. Thes. Conch.* i. 127. n. 103. t. 30. f. 245, 246.
Cycloph. turbinatus *Pfeiffer*, l. c. 107. n. 18.

a, b. Isle of Bohol. From the Collection of Mr. Cuming.

** *Axis umbilicated, partly covered with a tongue-like process.*

18. CYCLOPHORUS CANALIFERUS.

Cyclost. canaliferum *Sow. Zool. Proc.* 1842, 81., *Thes. Conch.* i. 115. n. 71. t. 27. f. 140—142., *Spec. Conch.* f. 195, 196.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 40. n. 32. i. 19. t. 5. f. 14—16.
Cyclost. Gironnieri *Soul. Rev. Zool.* 1842? (fide *Sow.*)
Cyclophorus canaliferus *Pfeiffer*, l. c. 107. n. 14.

a—c. Philippine Islands.
d—f. Philippine Islands. From the Collection of Mr. Cuming.

19. CYCLOPHORUS LINGUIFERUS.

Cyclost. linguiferum *Sow. Thes. Conch.* i. 125. n. 98. t. 29. f. 198.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 23. f. 1—3.
Cyclophorus linguiferus *Pfeiffer*, l. c. 107. n. 10.

a—d. Isle of Bohol. From the Collection of Mr. Cuming.

20. CYCLOPHORUS LINGULATUS.

Cyclost. lingulatum *Sow. Thes. Conch.* i. 126. n. 101. t. 29. f. 208—210.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 23. f. 6—9.
Cyclophorus lingulatus *Pfeiffer*, l. c. 107. n. 15.

a, *b*. Philippine Islands. From the Collection of Mr. Cuming.
c—*p*. Different varieties. From the Collection of Mr. Cuming.

**** Axis imperforated.*

21. CYCLOPHORUS TURBO.

Cyclost. turbo *Sow. Thes. Conch.* i. 116. n. 75. t. 25. f. 102, 103.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 19. f. 4, 5.
Cyclost. maculosa *Jay, Cat. of Shells*, 122. t. 7. f. 9, 10.
Trochus turbo *Chemn. Conch. Cab.* ix. 153. t. 122. f. 1059.
Cycloph. turbo *Pfeiffer*, l. c. 108. n. 19.

a. Sumatra.

22. CYCLOPHORUS ICTERICUS.

Cyclost. ictericum *Sow. Thes. Conch.* i. 131. n. 113. t. 31. f. 268, 269.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t 19. f. 8, 9.
Cycloph. ictericus *Pfeiffer*, l. c. 108. n. 20.

Hab. —— ?

§§ *Depressed.*

* *Peristome expanded. Axis umbilicated, open.*

23. CYCLOPHORUS OCULUS CAPRI.

Cyclost. oculus capri *Gray* in *Brit. Mus.; Sow. Thes. Conch.* i. 115. n. 73. t. 25. f. 96.; *Reeve, Conch. Syst.* t. 184. f. 11.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 26. n. 18. i. 19. t. 3. f. 5, 6.
Helix oculus capri *Wood, Ind. Test.* t. 32. f. 7.
Cyclost. volvulus (pars) *Lamck.* viii. ed. 2d. 353. n. 2.
Cyclost. Rafflesii *Sow. Zool. Journ.* v. 50.
Cyclost. indica *Desh. Belang. Voy.* 415. t. 1. f. 4, 5.; *Lamck. An. s. Vert.* 2d. ed. 363. n. 28.; *Müller, Synops.* 38.; *Philippi, Abbild. und Beschr. Conch.* i. 5. 103. t. 1. f. 2.
Cycloph.? oculus capri *Pfeiffer*, l. c. 108. n. 23.

a, *b*. —— ?
c, *d*. (Nearly smooth on last whorl.)

24. CYCLOPHORUS SEMISULCATUS.

Cyclost. semisulcatum *Sow. Proc. Zool. Soc.* 1843, 62., *Thes. Conch.* i. 124. n. 96. t. 25. f. 99.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 86. n. 81. i. 19. t. 11. f. 1, 2.
Cycloph. semisulcatus *Pfeiffer*, l. c. 108. n. 24.

a, *b*.——?
c—*e*. Malacca. Var. nearly white.

25. CYCLOPHORUS CARINIFERUS.

Cyclost. cariniferum *Sow. Thes. Conch.* i. 114. n. 69. t. 25. f. 98.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 19. f. 13—15.
Cycloph.? cariniferus *Pfeiffer*, l. c. 108. n. 25.

a—*c*. Madagascar. From the Collection of Mr. Cuming.

26. CYCLOPHORUS WOODIANUS.

Cyclost. Woodiana *Lea*, *Trans. Am. Phil. Soc.* 1841, vii. 465. t. 12. f. 19.
Cyclost. Woodianum *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 53. n. 46. i. 19. t. 7. f. 1—3.
Cyclost. Gironnieri *Soul. Rev. Zool.* 1842, 101.
Cyclost. luzonicum *Sow. Zool. Proc.* 1842, 80., *Spec. Conch.* f. 133., *Thes. Conch.* i. 114. n. 70. t. 27. f. 136, 137.
Cycloph. Woodianus *Pfeiffer*, l. c. 108. n. 28.

a—*h*. Luçon. From the Collection of Mr. Cuming.

27. CYCLOPHORUS MOULINSII.

Cyclost. Moulinsii *Grat. Act. Soc. Linn. Bord.* xi. 444. t. 3. f. 19.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 15. n. 6. i. 19. t. 2. f. 18, 19.
Cyclost. Desmoulinsii *Sow. Thes. Conch.* i. 125. n. 97. t. 25. f. 97.
Cycloph.? Moulinsii *Pfeiffer*, l. c. 108. n. 29.

a—*c*. Madagascar.
d. (Bad condition).

28. CYCLOPHORUS VITTATUS.

Cyclost. vittatum *Sow. Spec. Conch.* f. 91—94., *Thes. Conch.* i. 112. n. 62. t. 25. f. 89, 90.; *Reeve*, *Conch. Syst.* t. 185. f. 22.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 87. n. 82. i. 19. t. 11. f. 5, 6.
Cycloph.? vittatus *Pfeiffer*, l. c. 108. n. 26.

Hab. Madagascar.

a. Madagascar. Presented by J. E. Gray, Esq.

29. CYCLOPHORUS STENOSTOMA.

Cyclost. stenostoma *Sow. Thes. Conch.* i. 95. n. 13. t. 31. f. 261.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 20. f. 23—25. and f. 18, 19. Var.
Cyclost. planorbula *Enc. Méth.*?
Cycloph. stenostoma *Pfeiffer*, l. c. 108. n. 34.

a. Arabia.

30. Cyclophorus papua.

Cyclost. papua *Quoy & Gaim. Voy. Ast.* ii. 185. t. 12. f. 23—26.; *Lamck. An. s. Vert.* 2d. ed. viii. 369. n. 35.; *Pfeiffer, Kuster, Regist. zu Chemn.* 85. (in plate) *Kuster, Chemn. Conch. Cab.* i. 19. t. 4. f. 5, 6.
Cyclost. helicinum (in letter-press) *Pfeiffer, Kuster, Chemn. Conch.* 35. n. 26. t. 4. f. 5, 6.
Turbo helicinus *Chemn. Conch. Cab.* ix. 59. t. 123. f. 1067, 1068.
Turbo helicoides *Gmel.* 103.
Cyclost. spiraculum var. *Sow. Thes. Conch.* t. 31. f. 273; *Seba, Thes.* iii. t. 40. f. 15.?
Cycloph.? papua *Pfeiffer*, l. c. 108. n. 35.

Hab. India.

31. Cyclophorus maculosus.

Cyclost. maculosum *Sow. Proc. Zool. Soc.* 1843, 66., *Thes. Conch.* i. 112. n. 65. t. 31. f. 256, 257.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 54. n. 47. i. 19. t. 7. f. 4—6.
Cycloph.? maculosus *Pfeiffer*, l. c. 108. n. 31.

Hab. ——?

32. Cyclophorus annulatus.

Cyclost. annulatum *Troschel, Zeitsch. für Malak.* 1847, 150. n. 17.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 22. f. 17—19.
Cycloph. annulatus *Troschel MS.; Pfeiffer*, l. c. 108. n. 33.

Hab. Ceylon.

33. Cyclophorus distinctus.

Cyclost. distinctum *Sow. Thes. Conch.* i. 106. n. 47. t. 24. f. 38.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 7—9.
Cycloph.? distinctus *Pfeiffer*, l. c. 108. n. 37.

Hab. Bay of Montija, W. Columbia.

** *Peristome straight.*

34. Cyclophorus Cumingii.

Cyclost. Cumingii *Sow. Proc. Zool. Soc.* 1832, 32., *Spec. Conch.* f. 187—189., *Thes. Conch.* i. 108. n. 54. t. 24. f. 68, 69.; *Müller, Synop.* 37.; *Lamck. An. s. Vert.* 2d ed. viii. 367. n. 30.; *Reeve, Conch. Syst.* t. 185. f. 19.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 92. n. 89. i. 19. t. 12. f. 1—3.; *Jay, Cat. of Shells*, 122. t. 7. f. 4, 5.?
Cyclost. striata *Lea, Fér.* in *Bull. Zool.* 1835, 101.
Cycloph. Cumingii *Pfeiffer*, l. c. 108. n. 32.

a—d. Island of Tumaco, W. Columbia. From the Collection of Mr. Cuming

35. CYCLOPHORUS RUFESCENS.

Cyclost. rufescens *Sow. Thes. Conch.* i. 94. n. 11. t. 24. f. 36, 37.; *Pfeiffer, Küster, Chemn. Conch. Cab.* i. 19. t. 12. f. 16—18.
Cycloph. rufescens *Pfeiffer*, l. c. 108. n. 36.

a—c. Martinique.

36. CYCLOPHORUS DISJUNCTUS.

Cyclost. disjunctus *Moric.*
Cycloph.? disjunctus *Pfeiffer*, l. c. 108. n. 39.

Hab. —— ?

37. CYCLOPHORUS PARVUS.

Cyclost. parvum *Sow. Thes. Conch.* i. 101. n. 29. t. 31. f. 254, 255.; *Pfeiff.* l. c. 105. n. 14.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 13. f. 15, 16.

a—c. Philippine Islands.

38. ? CYCLOPHORUS CYTORA.

Cyclostoma Cytora *Gray, Proc. Zool. Soc.* 1849.

a. New Zealand. Presented by Major Greenwood.

7. LEPTOPOMA.

Operculum membranous, closely whorled, flat. — *Shell* globose, turbinated, or conical; narrowly umbilicated. Peristome simple, reflexed; with distant margins, joined sometimes by a very thin callus.

Leptopoma *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847, 47. 108.

§ *Subglobose.*

* *Whorls rounded, not keeled.*

1. LEPTOPOMA PERLUCIDUM.

Cyclost. perlucida *Grat. Act. Soc. Linn. Bord.* xi. 442. t. 3. f. 13.
Cyclost. perlucidum *Pfeiffer, Kuster, Chemn. Conch. Cab.* 19. n. 11. i. 19. t. 2. f. 5—10. t. 16. f. 8.
Cyclost. concinnum *Sow. Proc. Zool. Soc.* 1843, 61., *Thes. Conch.* i. 134. n. 122. t. 29. f. 223, 224.; *De Less. Recueil*, t. 38. f. 14.
Cyclost. multilineata *Jay, Cat. of Shells*, 1839, 123. t. 7. f. 12, 13.?
Lept. perlucidum *Pfeiffer*, l. c. 108. n. 4.

a—h. Philippine Islands. From the Collection of Mr. Cuming.

i. Philippine Islands. Var. From the Collection of Mr. Cuming.

2. LEPTOPOMA NITIDUM.

Cyclost. nitidum *Sow. Proc. Zool. Soc.* 1843, 60., *Thes. Conch.* i. 133. n. 121. t. 29. f. 225—227.; *Reeve, Conch. Syst.* 183. f. 2.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 96. n. 92. i. 19. t. 12. f. 27—29. t. 16. f. 10.

Lept. nitidum *Pfeiffer*, l. c. 108. n. 6.

a—e. Philippine Islands. From the Collection of Mr. Cuming.

f—h. Philippine Islands. Var. From the Collection of Mr. Cuming.

3. LEPTOPOMA LUTEUM.

Cyclost. luteum *Less. Voy. Coq. Zool.* ii. 345. t. 13. f. 5.

Lept.? luteum *Pfeiffer*, l. c. 108. n. 7.

Hab. Tahiti.

4. LEPTOPOMA VITREUM.

Cyclost. vitreum *Less. Voy. Coq. Zool.* ii. 346. t. 13. f. 6.; *Sow. Thes. Conch.* i. 134. n. 124. t. 30. f. 252.; *Lamck. An. s. Vert.* 2d ed. viii. 367. n. 31.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 24—26.

Cyclost. lutea *Quoy & Gaim. Voy. Astr. Zool.* ii. 180. t. 12. f. 11—14.

Lept. vitreum *Pfeiffer*, l. c. 108. n. 8.

a. ——?

5. LEPTOPOMA LUTEOSTOMA.

Cyclost. luteostoma *Sow. Thes. Conch.* i. 135. n. 125. t. 30. f. 228, 229.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 96. n. 93. i. 19. t. 12. f. 21—23.

Lept. luteostoma *Pfeiffer*, l. c. 108. n. 9.

a—c. Philippine Islands. From the Collection of Mr. Cuming.

6. LEPTOPOMA MASSENÆ.

Cyclost. Massenæ *Less. Voy. Coquille, Zool.* ii. 346. t. 13. f. 7.

Lept. Massenæ *Pfeiffer*, l. c. 108. n. 2.

Hab. New Guinea.

7. LEPTOPOMA MELANOSTOMA.

Cyclost. melanostoma *Petit, Rev. Zool.* iv. 1841, 308.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 25. f. 12—15.

Lept. melanostoma *Pfeiffer*, l. c. 108. n. 5.

Hab. ——?

** *Whorls rounded, slightly keeled.*

8. LEPTOPOMA IMMACULATUM.

Turbo immaculatus *Chemn. Conch. Cab.* ix. 57. t. 123. f. 1063.
(Turbo) Cyclostoma læve *Gray* in *Wood's, Cat. Supp.* t. 6. f. 5.; *Sow. Proc. Zool. Soc.* 1843, 63., *Thes. Conch.* i. 133. n. 120. t. 29. f. 220—222.
Cyclost. immaculatum *Sow. Spec. Conch.* ii. 124.; *Beechey, Voy. Zool.* t. 38. f. 29.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 3. f. 7. t. 7. f. 23, 24. t. 16. f. 10. var.
Cyclost. maculata *Lea, Observ. on Unio*, ii. 68. t. 23. f. 87.?
Cyclost. maculosa *Soul. Rev. Zool.* 1842, 101.?
Turbo marginellus *Gmel.* 102. 3602.
Lept. immaculatum *Pfeiffer*, l. c. 108. n. 3.

a—h. Philippines. From the Collection of Mr. Cuming.
i—k. Philippines. Var. minor. From the Collection of Mr. Cuming.
l—m. Philippines. Var. last whorl subcarinated: *Chemn.* l. c. f. 1063.

9. LEPTOPOMA INSIGNE.

Cyclost. insigne *Sow. Thes. Conch.* i. 138. n. 132. t. 30. f. 232.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 12. f. 19, 20.
Lept. insigne *Pfeiffer*, l. c. 108. n. 10.

a—c. Philippine Islands. From the Collection of Mr. Cuming.

10. LEPTOPOMA PANAYENSE.

Cyclost. panayense *Sow. Thes. Conch.* i. 134. n. 123. t. 30. f. 239. *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 28, 29.
Lept. Panayense *Pfeiffer*, l. c. 108. n. 11.

a—c. Island of Panay. From the Collection of Mr. Cuming.

11. LEPTOPOMA CILIATUM.

Cyclost. ciliatum *Sow. Thes. Conch.* i. 127. n. 102. t. 30. f. 237, 238.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 26, 27.
Lept. ciliatum *Pfeiffer*, l. c. 109. n. 12.

Hab. Island of Luçon: *Cuming.*

12. LEPTOPOMA PERPLEXUM.

Cyclost perplexum *Sow. Thes. Conch.* i. 136. n. 127. t. 30. f. 243, 244.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 16. f. 11, 12.

Lept.? perplexum *Pfeiffer*, l. c. 109. n. 14.

a—c. Philippine Islands. From the Collection of Mr. Cuming.

§§ *Conical, elevated. Whorls keeled.*

13. LEPTOPOMA FIBULA.

Cyclost. fibula *Sow. Thes. Conch.* i. 135. n. 126. t. 30. f. 240—242.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. f. 23, 24. t. 16. f. 4. var.

Lept. fibula *Pfeiffer*, l. c. 109. n. 15.

a—c. Isle of Luçon. From the Collection of Mr. Cuming.

d—f. Isle of Luçon. Var. From the Collection of Mr. Cuming.

g—i. Isle of Luçon. Var. From the Collection of Mr. Cuming.

14. LEPTOPOMA GONIOSTOMA.

Cyclost. goniostoma *Sow. Proc. Zool. Soc.* 1843, 64., *Thes. Conch.* i. 137. n. 131. t. 30. f. 233, 234.; *Reeve, Conch. Syst.* ii. t. 183. f. 3.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 19. n. 10. i. 19. t. 2. f. 5—7. t. 16. f. 5.

Lept. goniostoma *Pfeiffer*, l. c. 109. n. 16.

a—d. Island of Mindanao. From the Collection of Mr. Cuming.

15. LEPTOPOMA PILEUS.

Cyclost. pileus *Sow. Proc. Zool. Soc.* 1843, 31., *Thes. Conch.* i. 136. n. 128. t. 29. f. 196, 197.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 18. n. 9. i. 19. t. 2. f. 3, 4.

Lept. pileus *Pfeiffer*, l. c. 109. n. 17.

a—f. Philippine Islands. From the Collection of Mr. Cuming.

16. LEPTOPOMA ATRICAPILLUM.

Cyclost. atricapillum *Sow. Proc. Zool. Soc.* 1843, 64., *Thes. Conch.* i. 137. n. 130. t. 30. f. 230, 231.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 2. f. 11, 12. t. 16. f. 6, 7. var.

Lept. atricapillum *Pfeiffer*, l. c. 109. n. 18.

a—c. Philippine Islands. From the Collection of Mr. Cuming.

17. LEPTOPOMA MULTILABRE.

Cyclost. multilabris *Lamck. An. s. Vert.* vi. 148. 2nd ed. viii. 360. n. 24.; *De Lessert, Recueil*, t. 29. f. 14.; *Quoy et Gaim. Voy. Astrol.* ii. 183. t. 12. f. 20—22.
Cyclost. atricapillum (pars olim) *Pfeiffer, Kuster, Chemn. Conch. Cab.* 20. n. 12.
Lept. multilabre *Pfeiffer*, l. c. 109. n. 19.

Hab. ——?

18. LEPTOPOMA ACUMINATUM.

Cyclost. acuminatum *Sow. Thes. Conch.* i. 138. n. 133. t 30. f. 235.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 13. f. 11, 12.
Lept.? acuminatum *Pfeiffer*, l. c. 108. n. 1.

a—c. Isle of Luçon. From the Collection of Mr. Cuming.

§§§ *Conical depressed. Whorls acutely keeled.*

19. LEPTOPOMA HELICOIDES.

Cyclost. helicoides *Grat.*; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 15. f. 25, 26. t. 16. f. 1—3. var.
Cyclost. Stainforthii *Sow. Zool. Proc.* 1842, 82., *Thes. Conch.* i. 136. n. 129. t. 29. f. 215, 216. t. 30. f. 217.
Lept. helicoides *Pfeiffer*, l. c. 109. n. 20.

a—g. Philippine Islands. From the Collection of Mr. Cuming.

20. LEPTOPOMA ACUTIMARGINATUM.

Cyclost. acutimarginatum *Sow. Thes. Conch.* i. 124. n. 95. t. 27. f. 138, 139.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 15. f. 19, 20.
Lept. acutimarginatum *Pfeiffer*, l. c. 109. n. 21.

a—d. China. From the Collection of Mr. Cuming.

8. ALYCÆUS.

Operculum horny, many-whorled. — *Shell* conical, spire regular. Last whorl distorted, compressed, much contracted before the mouth. Mouth circular. Peristome regularly reflexed.

Alycæus *Gray MS. B. M.*
Cyclophorus sp. *Pfeiffer*, l. c.

§ *Spire conical. Axis perforated. Last whorl much compressed.*

1. ALYCÆUS GIBBUS.

Cyclost. gibbum *Fér. Mag. de Zool.* t. 117. f. 1.; *Sow. Thes. Conch.* i. 139. n. 135. t. 30. f. 247, 248.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 17. f. 4—6.
Cycloph. gibbus *Pfeiffer*, l. c. 108. n. 21.

a. Cochin China.

§§ *Shell depressed. Axis umbilicated. Last whorl slightly compressed.*

2. ALYCÆUS STRANGULATUS.

Cyclost. strangulatus *Hutton; Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 17. f. 7, 8.
Cycloph. strangulatus *Pfeiffer*, l. c. 108. n. 30.

a—z. Landour, India. From the Collection of Capt. Boys.

c. *Operculum horny, thin, many-whorled. Shell oblong, elongate. Last whorls with a fold or spiral ridge on the inner side in front of the axis, sometimes forming a groove in the outer lip.*

9. FARCIMEN.

Shell oval or pupiform, elongate. Last whorl without any, or only a very slight, angularity in front. Mouth circular. Peristome reflexed.

Farcimen *Troschel* in *Menke und Pfeiffer, Zeit. f. Malak.* 1847, 44.; *Gray, Proc. Zool. Soc.* 1847, 182.
Megalomastoma (pars) *Pfeiffer* in *Menke und Pfeiff. Z. f. Malak.* 1847.
Megalomastoma sp. *Swains. Malac.* 1841.

§ *Peristome slightly thickened all round.*

1. FARCIMEN CYLINDRACEUM.

Helix cylindracea *Chemn. Conch. Cab.* ix. 166. t. 135. f. 1233.
Helix crocea *Gmel. Syst. Nat.* 3655. n. 243.
Cyclost. flavula *Lamck. An. s. Vert.* vi. 146. 2nd ed. viii. 357. n. 13.
Cyclost. flavidum *Gray* in *Wood's Ind. Test. Supp.* t. 6. f. 31.; *Sow. Thes. Conch.* i. 108. n. 53. t. 24. f. 66, 67.
Cyclost. croceum *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 17. f. 1—3.

Megalomastoma flavula *Swains. Malac.*
Megalomast. cylindraceum *Pfeiffer*, l. c. 109. n. 4.

a. ——?
b. Porto Rico.

2. FARCIMEN CROCEUM.

Cyclost. croceum *Sow. Thes. Conch.* i. 150. n. 167. t. 29. f. 190, 191.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 24. f. 15, 16.
Turbo croceus *Dillw. Cat.* ii. 862. n. 112.
Cyclost. flavula *Lamck. Enc. Méth.* t. 461. f. 6. a. b., *An. s. Vert.* vi. 146. 2nd ed. viii. 357. n. 13.; *Webb et Berth. Syn. Moll. Canar.* 18. n. 3.; *Desh. Enc. Méth. Vers*, ii. 40. n. 8.
Megalomast. croceum *Pfeiffer*, l. c. 109. n. 5.

a. ——?

3. FARCIMEN SECTILABRUM.

Cyclost. sectilabrum *Gould; Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 24. f. 17, 18.
Megalomast. sectilabrum *Pfeiffer*, l. c. 109. n. 6.

Hab. —— ?

§§ *Peristome not thickened near the penultimate whorl.*

4. FARCIMEN TORTUM.

Turbo tortus *Wood's Cat. Supp.* t. 6. f. 32.
Cyclost. tortum *Gray* in *Wood's Cat. Supp.; Sow. Thes. Conch.* i. 151. n. 169. t. 28. f. 181, 182.; *Pfeiffer, Kust. Chemn. Conch. Cab.* i. 19. t. 17. f. 22, 23.
Cyclost. torta *Lamck. An. s. Vert.* 2nd ed. viii. 372. n. 42.
Cyclost. bicolor *Gould.*
Cyclost. idolium —— ?
Megalomost. tortum *Pfeiffer*, l. c. 109. n. 7.

a—d. Cuba.
e. ——?

Var. 1.

Cyclost. ventricosum *D'Orb.; Sow. Thes. Conch.* i. 151. n. 170. t. 28. f. 183, 184.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 17. f. 20, 21.
Megalomast. ventricosum *Pfeiffer*, l c. 109. n. 10.

f. Cuba.

Var. 2.

Cyclost. auriculatum *D'Orb.* in *Sow. Thes. Conch.* i. 151. n. 171.

t. 31. f. 277.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 17. f. 12—17.

Megalomast. auriculatum *Pfeiffer*, l. c. 109. n. 8.

g. Cuba. Presented by E. Doubleday, Esq.

Var. 3.

Cyclost. alutaceum *Menke*, *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 17. f. 18, 19.

Megalomast. alutaceum *Pfeiffer*, l. c. 109. n. 9.

Hab. ——?

10. ELECTRINA.

Operculum orbicular, many-whorled, horny? — *Shell* conical short, covered with a thin periostraca. Spire conical. Axis perforated. Whorls with a strongly marked keel in the front, forming an edge to the axis. Mouth circular, continued, simple.

Electrina *Gray MS. B. M.*

1. ELECTRINA SUCCINEA.

Cyclost. succineum *Sow. Zool. Proc.* 1832, 32., *Thes. Conch.* i. 108. n. 51. t. 23. f. 18, 19.; *Müller*, *Synops.* 37.; *Pfeiffer*, *Kuster Chemn. Conch. Cab.* 24. n. 15. i. 19. t. 3. f. 12. 13. magn. f. 14.

Cyclost. australe *Mühlf. Anton. Verz.* 54.

Cycloph. succineus *Pfeiffer*, l. c. 108. n. 22.

a—d. Opara. From the Collection of Mr. Cuming.

11. MEGALOMASTOMA.

Operculum horny, thin, closely whorled, flat. — *Shell* scarcely perforated, cylindrical or pupa-shaped, covered with a thin periostraca. Mouth orbicular, with a slight groove on front angle. Peristome continuous, thickened or reflexed. Last whorl with a ridge round the axis in front.

Megalomastoma *Gould MS.* in *Swains. Malac.* 1840; *Gray*, *Syn. B. M.* 1842, 91., *Proc. Zool. Soc.* 1847, 182.; *Pfeiffer* in *Menke und Pfeiffer*, *Z. f. Malak.* 1847.

§ *Peristome continued, thickened all round.* Asia.

1. MEGALOMASTOMA TORTUOSUM.

Turbo tortuosus *Chemn. Conch. Cab.* xi. t. 195. A. f. 1882. 1883.

Cyclost. tortuosum *Sow. Thes. Conch.* i. 152. n. 172. t. 28. f. 185, 186.; *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 24. f. 19, 20.

Meg. tortuosum *Pfeiffer*, l. c. 102. n. 3.

a. Nicobar Islands. From the Collection of Lord Tankerville.

2. MEGALOMASTOMA ALTUM.

Cyclost. altum *Sow. Thes. Conch.* i. 152. n. 173. t. 28. f. 187.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 15. f. 12—14.
Cyclost. brunneum *Gould?*
Meg. altum *Pfeiffer*, l. c. 109. n. 1.

a—c. Isle of Negros. From the Collection of Mr. Cuming.

3. MEGALOMASTOMA FUNICULATUM.

Cyclostoma funiculatum *Benson MS.*

a—c. Darjeeling. From the Collection of Capt. Boys.
d, e. Himalaya. Presented by Dr. Horsfield.

4. MEGALOMASTOMA LAYARDII.

a. Ceylon. Presented by H. L. Layard, Esq.

§§ *Peristome not thickened near the penultimate whorl.* America.

5. MEGALOMASTOMA ANTILLARUM.

Cyclost. Antillarum *Sow. Thes. Conch.* i. 150. n. 168. t. 28. f. 180.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 15. f. 15, 16.
Cyclost. elongatum *Gould MS.*
Megalomastoma elongatum *Swainson, Malac.* 1840.
Cyclost. suspensum *Guild.*
Megalomastoma suspensum *Pfeiff.* l. c. 109. n. 11.
Meg. Antillarum *Pfeiff.* l. c. 109. n. 2.

a—n. St. Vincent's, W. Indies. From the Collection of Rev. Lansdown Guilding.
o—q. —— ?

12. REGISTOMA.

Shell oval, polished. Whorls rather distorted, large, flattened. Mouth orbicular. Peristome reflexed, inner lip thin, with a slight notch on the inner side near the axis.

Registoma *Hasselt, Allg. Konst. en Letterbode*, 1823; *Férussac, Bulletin Sci.* 1824; *Gray, Syn. B. M.* 1842, 91., *Proc. Zool. Soc.* 1847, 182.
Rhegostoma *Agassiz, Nomenclat. Zoolog.*
Rhexistoma *Hermannsen, Ind. Gen.* ii. 390.

Moulinsia *Grateloupe, Trans. Linn. Soc. Bord.; Gray, P. Z. Soc.* 1847, 182.
Pupina sp. *Gray, Ann. Nat. Hist.* 1840, 77.
Pupina *Pfeiffer*, l. c.

§ *Last whorl large, much flattened.*

1. REGISTOMA GRANDE.

Pupina grandis *Gray, Ann. Nat. Hist.* 1840, 77.
Pupina Nunezii *Sow. Thes. Conch.* i. 17. n. 1. t. 4. f. 8—11.; *Pfeiffer*, l. c. 110. n. 1.
Moulinsia Nunezii *Grat. Ann. Soc. Linn. Bord.* 1840.

a, b. Isle of Leyte, Philippines. From the Collection of Mr. Cuming.
c, d. Isle of Luçon, Philippines. Var. From the Collection of Mr. Cuming.
e. Isle of Samar, Philippines. Var. From the Collection of Mr. Cuming.
f. Isle of Catanduanos, Philippines. Var. From the Collection of Mr. Cuming.

2. REGISTOMA PELLUCIDUM.

Pupina pellucida *Sow. Zool. Proc.* 1842, *Thes. Conch.* i. 17. n. 2. t. 4. f. 18—20.; *Pfeiffer*, l. c. 110. n. 2.

a, b. Isle of Zebu, Philippines. From the Collection of Mr. Cuming.

3. REGISTOMA SIMILE.

Pupina similis *Sow. Zool. Proc.* 1842, *Thes. Conch.* i. 18. n. 5. t. 4. f. 4, 5.; *Pfeiffer*, l. c. 110. n. 3.

a—c. Isle of Luçon. From the Collection of Mr. Cuming.
d. Isle of Luçon. Var. From the Collection of Mr. Cuming.

§§ *Last whorl nearly like the others.*

4. REGISTOMA FUSCUM.

Pupina fusca *Gray, Ann. N. Hist.* 1840, 77.
Pupina vitrea *Sow. Zool. Proc.* 1842, *Thes. Conch.* i. 18. n. 4. t. 4. f. 6, 7.; *Pfeiffer*, l. c. 110. n. 4.
Registoma vitreum *Hasselt?*

a—c. Philippine Islands. From the Collection of Mr. Cuming.
d—l. Manilla. Presented by J. Fox, Esq.
m—o. —— ? Presented by Mr. Powis.

5. REGISTOMA EXIGUUM.

Pupina exigua *Sow. Zool. Proc.* 1842, *Thes. Conch.* i. 18. n. 6. t. 4. f. 17.; *Pfeiffer*, l. c. 110. n. 5.

a—d. Isle of Luçon. From the Collection of Mr. Cuming.

13. PUPINA.

Operculum thin, membranous, narrow-whorled, rather flat.—*Shell* pupa-shaped, for the most part covered by a smooth callus. Peristome simple, thickened or reflexed; the columellar margin channel-cut in the middle.

Pupina *Vignard, Ann. Sci. Nat.* 1829; *Gray, Syn. B. M.* 1844, 91., *Proc. Zool. Soc.* 1847, 182.

Pupina § 2. *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847.

1. PUPINA BICANALICULATA.

Pup. bicanaliculata *Sow. Zool. Proc.* 1842, *Thes. Conch.* i. 19. n. 9. t. 4. f. 1.; *Pfeiffer*, l. c. 110. n. 7.

a, b. Restoration Island, N.E. coast of Australia. Presented by Capt. Wickham, R.N.

c. Blackwood Bay, Australia. Presented by Sir John Richardson, M.D., R.N.

2. PUPINA HUMILIS.

Pup. humilis *Jacq. Pfeiffer*, l. c. 110. n. 6.

Pupina antiquata *Sow.* (fide *Pfeiffer*, l. c.)

Hab. —— ?

3. PUPINA AUREA.

Pup. aurea *Hinds, Pfeiffer*, l. c. 110. n. 8.

Hab. —— ?

4. PUPINA KERAUDRENII.

Pup. Keraudrenii *Vignard, Ann. Sci. Nat.* 1829, t. .; *Pfeiffer*, l. c. 110. n. 9.; *Sow. Thes. Conch.* i. 19. n. 8. t. 4. f. 2.

Hab. Manilla and Singapore.

14. PUPINELLA.

Operculum horny.—*Shell* oval, covered with a thin horny periostraca. Mouth circular. Peristome reflexed, thickened, with a groove on the inner side of front near the axis.

Pupinella *Gray MS. B. M.*
Pupina § 3. *Pfeiffer*, l. c.

1. PUPINELLA PUPINIFORMIS.

Pupina Sowerbyi *Pfeiffer*, l. c. 110. n. 10.
Cyclostoma pupiniforme *Sow. Thes. Conch.* i. 152. n. 174. t. 28. f. 188.

a, *b*. Isle of Luçon. From the Collection of Mr. Cuming.

15. CALLIA.

Operculum thin, membranous, narrow-whorled.—*Shell* pupiform, covered with a smooth shining callus. Peristome subcontinuous, straight, scarcely thickened, columellar margin entire, above appressed-reflexed; in the young altogether closing the perforation.

Callia *Gray*, *Ann. Nat. Hist.* 1840, 77., *Syn. B. M.* 1840, 1842, 91. 1844, 72., *Proc. Zool. Soc.* 1847, 182.; *Pfeiffer* in *Menke und Pfeiffer*, *Z. f. Malak.* 1847.
Pupina sp. *Sow. Proc. Z. S.* 1842.

1. CALLIA LUBRICA.

Pupina lubrica *Sow. Zool. Proc.* 1842, *Thes. Conch.* i. 18. n. 3. t. 4. f. 12—16.
Callia lubrica *Pfeiff.* l. c. 110. n. 1.

a—*f*. Isle of Luçon. From the Collection of Mr. Cuming.
g—*i*. Philippine Islands. Var. From the Collection of Mr. Cuming.
j—*l*. Isle of Zebu. Var. From the Collection of Mr. Cuming.

B. *Operculum ovate, of a few more or less rapidly enlarging whorls, nucleus excentric.*

a. *Operculum thick, with an external shelly coat.*

16. LEONIA.

Operculum ovate, with a single whorl; convex externally (very like *Phasianella*).—*Shell* ovate, conical. Peristome simple, slightly reflexed.

Leonia *Gray*, *Syn. Brit. Mus.* 1840, 1842, 91.

1. LEONIA MAMMILLARIS.

Cyclostoma mammillaris *Lamck. An. s. Vert.* vi. 147. 2nd edit. viii. 359. n. 19.; *De Lessert*, *Recueil*, t. 29. f. 10. a—d.

Cyclost. mamillare *Sow. Thes. Conch.* i. 102. n. 35. t. 24. f. 45.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 28, 29.; *Pfeiff.* l. c. 105. n. 20.

Cyclost. Voltzianum *Mich. Coq. d'Algers*, 10. n. i. f. 21, 22.; *Potiez et Mich. Gal. Moll. Douai*, i. 243. n. 23. bis, t. 24. f. 24, 25.

Cyclost. Volziana *Lamck. An. s. Vert.* 2nd edit. viii. 371. n. 39.

Cyclost. lævigatum *Sow. MS.* in *Cab. Gray*, not Thesaurus Conch.

a—h. Oran, Algiers.
i—m. Var. larger. —— ?

17. LITHIDION.

Operculum subcircular, shelly; whorls rather rapidly enlarged, with a strong, convex, subcentral keel, and simple edges.—*Shell* depressed, broadly umbilicated, open. Mouth circular. Peristome simple.

1. LITHIDION SULCATUM.

Cyclostoma lithidion *Sow. Thes. Conch.* i. 111. n. 61. t. 31. f. 262.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 20—22.; *Pfeiffer*, l. c. 112. n. 4.

a. Yemen, Arabia.

18. OTOPOMA.

Operculum shelly, solid; whorls convex in the centre, with simple edges.—*Shell* subglobose, solid, umbilicated, with an ear-like process from the inner side of the mouth, covering part of the axis. Mouth circular. Peristome simple, or slightly reflexed.

§ *Whorls rounded in front of axis.*

1. OTOPOMA FOLIACEUM.

Turbo foliaceus *Chemn. Conch. Cab.* xi. 59. t. 123. f. 1069, 1070.; *Gmel. Linn. Syst. Nat.* 104.

Cyclost. foliaceum *Pfeiffer, Kuster, Chemn. Conch. Cab.* 36. n. 27. t. 4. f. 10, 11.

Cyclost. naticoides *Recluz, Rev. Zool.* 1843, 3., *Mag. Zool.* 1843, t. 73.; *Sow. Thes. Conch.* i. 117. n. 78. t. 26. f. 108, 109.; *Pfeiff.* l. c. 104. n. 1.; *Kuster, Chemn. Conch. Cab.* 37. n. 28. i. 19. t. 5. f. 1—4.

Cyclost. clathratulum *Recluz, Rev. Zool.* 1843, 3., *Mag. Zool.* 1843, t. 74.; *Sow. Thes. Conch.* i. 97. n. 17. t. 23. f. 15, 16.;

Pfeiff. l. c. 104. n. 4.; *Kuster, Chemn. Conch. Cab.* 38. n. 29. i. 19. t. 5. f. 5—7.

a. Socotra.
b, c. Arabia Felix.
d. Socotra (C. clathratulum *Recluz.*)

2. OTOPOMA CLAUSUM.

Cyclost. clausum *Sow. Thes. Conch.* i. 128. n. 104. t. 31. f. 266, 267.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 20. f. 13—15., *Zeitsch.* l. c. 112. n. 2.

Hab. Yemen, Arabia.

3. OTOPOMA LISTERI.

Cyclost. Listeri *Gray, Ann. Philos.* 1821; *Sow. Thes. Conch.* i. 98. n. 20. t. 23. f. 22, 23.; *Pfeiffer, Zeitsch.* l. c. 105. n. 10; *Kuster, Chemn. Conch. Cab.* i. 19. t. 12. f. 30, 31.

Cyclost. fimbriata *Quoy & Gaim. Voy. Astrol.* ii. 188. t. 12. f. 31—35.; *De Lessert, Recueil.* t. 29. f. 12. a—c.? *Philippi*, ——? *Gratel.* ——?

Cyclost. unifasciatum *Sow. Thes. Conch.* i. 119. n. 81. t. 26. f. 105, 106.; *Pfeiffer, Zeitsch.* l. c. 106. n. 73.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 25. f. 4, 5.; *Lister, Conch.* t. 44. f. 42.

a—e. Mauritius.

4. OTOPOMA AURICULARE.

Cyclost. auriculare *Gray* in *Griffith's A. K.* xii. t. 28. f. 5.

Cyclost. candidum *Sow. Thes. Conch.* i. 117. n. 77. t. 26. f. 107.; *Pfeiffer, Zeitsch.* l. c. 104. n. 2.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 25. f. 6.

a. ——?

5. OTOPOMA ALBICANS.

Cyclost albicans *Sow. Spec. Conch.* f. 104, 105., *Beechey's Voy. Zool.* 146. t. 38. f. 30., *Thes. Conch.* i. 118. n. 79. t. 26. f. 110—112.; *Pfeiff. Zeitsch.* l. c. 104. n. 3.; *Kuster, Chemn. Conch. Cab.* 87. n. 83. i. 19. t. 11. f. 13, 14.

Hab. ——? Cab. Gray.

6. OTOPOMA HÆMASTOMUM.

Cyclost. hæmastomum *Ant. Verzeichn.* 54. n. 1954.; *Pfeiff. Zeitsch.* l. c. 104. n. 5.; *Kuster, Chemn. Conch. Cab.* 24. n. 16. i. 19. t. 3. f. 3, 4.

Hab. Isle of France.

7. OTOPOMA POLITUM.

Cyclost. politum *Sow. Thes. Conch.* i. 97. n. 18. t. 23. f. 17.; *Pfeiff. Zeitsch.* l. c. 104. n. 6.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 13, 14.

Hab. —— ?

8. OTOPOMA PYGMÆUM.

Cyclost. pygmæum *Sow. Thes. Conch.* i. 104. n. 39. t. 30. f. 253.; *Pfeiff.* l. c. 105. n. 5.

a. New Ireland. Presented by R. B. Hinds, Esq.

9. OTOPOMA SPURCUM.

Cyclost. spurcum *Grat.* (not Sow.); *Pfeiff.* l. c. 104. n. 7.

Hab. —— ?

§§ *Whorls keeled in front of axis, with a lip-like callus in axis.*

10. OTOPOMA MICHAUDI.

Cyclost. Michaudi *Grat.; Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 18. f. 14— 6.

Cyclost. carinatum *Sow. Thes. Conch.* i. 119. n. 83. t. 26. f. 117, 118. (not Cyclost. carinata *Lamch.*)

Tropidophora Michaudi *Pfeiff. Zeitsch.* l. c. 106. n. 13.

a. —— ?

19. TROPIDOPHORA.

Operculum shelly, flat; whorls from 4 to 5, gradually increasing. *Shell* depressed, or highly turbinated, generally acutely keeled, or strongly striated. Peristome simple, subcontinuous, reflexed, often partially covering the axis.

Tropidophora *Troschel* in *Menke und Pfeiffer, Zeitsch. f. Malak.* 1847, 44.; *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847, 106.

§ *Peristome simple, reflexed. Axis open.*

1. TROPIDOPHORA CUVIERIANA.

Cyclostoma Cuvierianum *Petit, Rev. Zool.* 1841, 184., *Mag. Zool. Moll.* t. 55.; *Reeve, Conch. Syst.* t. 184. f. 14. t. 185. f. 24.; *Sow. Thes. Conch.* i. 115. n. 72. t. 30. f. 218, 219.; *Philippi,*

Abbild. und Beschr. Conch. i. 5. 103. t. 1. f. 1.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 9. n. 1. i. 19. t. 1. f. 1—4.

Tropidophora Cuvieriana *Pfeiffer, Zeitsch.* l. c. 106. n. 1.

a. Madagascar.

Var. 1. *Smaller, axis open.*

Cyclost. Deshayesianum *Petit, Mag. de Zool.* 2nd ser. 1844, *Mollusques*, t. 98.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 25. f. 8—10.

Tropidoph. Deshayesiana *Pfeiffer*, l. c. 106. n. 6.

Hab. Madagascar.

Var. 2. *Smaller, axis nearly closed.*

Cyclostoma —— ? *Sow. Proc. Z. Soc.?*

a. Madagascar.

2. TROPIDOPHORA ARTICULATA.

Cyclost. articulata *Gray* in *Griffith's A. K.* t. 28. f. 1.

Cyclost. filosum *Sow. Beechey's Voy.* t. 38. f. 31., *Thes. Conch.* i. 96. n. 11. t. 23. f. 14.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 18. f. 12, 13.

Tropidoph. filosa *Pfeiffer*, l. c. 106. n. 2.; *Cab. Gray*, specimen figured by Gray & Sowerby.

Hab. East Indies.

3. TROPIDOPHORA CARINATA.

Lister, Hist. Conch. t. 28. f. 26.; *Schröter, Einleit. Conchyl.* ii. 181. n. 10.

Turbo carinatus *Born, Mus. Cæs. Vind.* 353. t. 13. f. 3, 4.; *Gmel. Syst. Nat.* 3601. n. 57.; *Dillwyn, Cat.* ii. 866. n. 123. (not Cyclost. carinata *Lamck.*, nor *Desh. Enc. Meth.* n. 3.)

Cyclost. tricarinatum *Sow. Thes. Conch.* i. 120. n. 86. t. 26. f. 122.

Tropidoph. carinata ? *Pfeiffer*, l. c. 106. n. 5. ?

Var. Cyclost. formosum *Sow. Proc. Zool. Soc.* 1849, 15. n. 71., *Moll.* t. 2. f. 8, 9.

a, b. —— ?

4. TROPIDOPHORA PULCHRA.

Cyclost. pulchra *Gray* in *Griffith's A. K.* t. 28. f. 3.

Cyclost. ortyx (*Val.*) *D'Orb. Mag. de Conch.* t. 117. f. 2.; *Sow. Thes. Conch.* i. 99. n. 24. t. 23. f. 27, 28.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 16. f. 13, 14.

Cyclost. multicarinata *Jay, Cat. of Shells*, 122. t. 7. f. 78.
Tropidoph. ortyx *Pfeiffer*, l. c. 107. n. 14.

a—d. Persian Gulf.

5. TROPIDOPHORA TRICARINATA.

Helix tricarinata *Müller, Hist. Verm.* ii. 84. n. 282., *Chemn. Conch. Cab.* ix. 85. t. 126. f. 1103, 1104.; *Gmel. Syst. Nat.* 3621. n. 34.
Turbo carinatus *Wood, Ind. Test.* t. 32. f. 125.
Cyclost. unicarinatum *Sow. Thes. Conch.* i. 120. n. 84. t. 26. f. 119, 120.
Cyclost. tricarinata *Lamck. An. s. Vert.* vi. 144. 2nd edit. viii. 355. n. 6.
Cyclost. tricarinatum *Potiez & Michaud, Gal. Moll. Douai*, i. 242. n. 21. t. 24. f. 22, 23.
Tropidoph. tricarinata *Pfeiffer*, l. c. 106. n. 12.

a—c. Madagascar.
d, e. —— ?

Var. 1. *Axis nearly completely closed by a callosity.*

Cyclost. bicarinatum *Sow. Thes. Conch.* i. 120. n. 85. t. 26. f. 121.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 19. f. 1—3.
Tropidoph. bicarinata *Pfeiffer*, l. c. 106. n. 9.

a—c. Madagascar.

Var. 2. *With only one keel.*

Cyclost. unicarinata *Lamck. An. s. Vert.* vi. 144. 2nd edit. viii. 355. n. 5.; *Desh. Enc. Méth. Vers*, ii. 40. n. 4. t. 461. f. 1. a, b.
Cyclost. unicarinatum *Potiez & Michaud, Gal. Moll. Douai*, t. 243. n. 23.
Cyclost. obsoletum var. *Sow. Thes. Conch.* i. 120. n. 84. t. 26. f. 125.; *Grat. Act. Soc. Linn. Bord.* xi. 443. t. 3. f. 17.
Cyclost. madagascariensis *Gray* in *Griffith's A. K.* t. 28. f. 4.
Cyclophora madagascariensis *Swainson, Malac.* 336.
Tropidoph. unicarinata *Pfeiffer*, l. c. 106. n. 4.

a. Madagascar.

Var. 3. *With several keels.*

Cyclost. carinata *Lamck. An. s. Vert.* vi. 143. 2nd edit. viii. 354. n. 3., exclusive of synonymes, with exception of *Desh. Enc. Méth. Vers*, ii. 40. n. 3.

Hab. Madagascar; fide *Deshayes.*

Var. 4. *2-keeled ?*

Cyclost. campanulatum *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 18. f. 4. 6.

Tropidoph. campanulata *Pfeiffer*, *Zeitsch.* l. c. 106. n. 8.

Hab. —— ?

6. TROPIDOPHORA OBSOLETA.

Cyclost. obsoleta *Lamck. An. s. Vert.* 1st edit. vi. 144., 2nd edit. viii. 355. n. 7.; *De Lessert, Recueil*, t. 29. f. 11.

Cyclost. obsoletum *Sow. Thes. Conch.* i. 121. n. 88. t. 26. f. 124.; *Reeve, Conch. Syst.* t. 183. f. 4.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 32. n. 23. t. 4. f. 14. (15.?) 1. 19. t. 5. f. 8, 9., *Zeitsch.* l. c. 106. n. 67.

Turbo ligatus *Chemn. Conch. Cab.* ix. 60. t. 123. f. 1073–74 ?

a, *b*. Madagascar.

7. TROPIDOPHORA APLUSTRIS.

Cyclost. aplustre *Sow. Proc. Zool. Soc.* 1849, 15. n. 2., *Moll.* t. 2. f. 4, 5.

Hab. Madagascar.

8. TROPIDOPHORA PULCHELLA.

Cyclost. pulchellum *Sow. Thes. Conch.* i. 129. n. 109. t. 31. f. 263, 264. young; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 18. f. 7, 8. (copied.)

Tropidoph. pulchella *Pfeiffer, Zeitsch.* l. c. 106. n. 11.

Cyclost. Hanleyi *Pfeiffer, Kuster, Chemn. Conch. Cab.* t. 19. t. 18. f. 9. 11. older.

Trop. Hanleyi *Pfeiffer, Zeitsch.* l. c. 106. n. 10.

a —— ?

9. TROPIDOPHORA ASPERA.

Cyclost. asperum *Pot. & Mich. Gal. Moll.* i. 233. t. 23. f. 15, 16.; *Pfeiff. Zeitsch.* l. c. 106. n. 69.; *Kuster, Chemn. Conch. Cab.* 90. n. 86. i. 19. t. 11. f. 3, 4.

Cyclost. Harveyanum *Sow. Thes. Conch.* i. 128. n. 106. t. 30. f. 250., *Spec. Conch.* f. 210.; *Reeve, Conch. Syst.* t. 184. f. 13.

a—*c*. Madagascar.

10. TROPIDOPHORA CALCAREA.

Cyclost. calcareum *Sow. Thes. Conch.* i. 118. n. 80. t. 26. f. 113.; *Pfeiffer, Zeitsch.* l. c. 106. n. 63.; *Kuster, Chemn. Conch. Cab.* 88. n. 84. i. 19. t. 11. f. 11, 12.

Cyclost. sulcata *Lamck. An. s. Vert.* vi. 144. 2nd edit. viii. 354. n. 4.; *De Lessert, Recueil*, t. 29. f. 9. a—c.

a. —— ?

11. ? TROPIDOPHORA CITRINA.

Cyclost. citrinum *Sow. Thes. Conch.* i. 117. n. 76. t. 25. f. 104.; *Pfeiffer, Zeitsch.* l. c. 106. n. 72.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 22.

a. Without operculum. —— ?

Var. *β. Smaller.*

Cyclost. rugosum *Sow. Thes. Conch.* i. 121. n. 87. t. 26. f. 123.?
Cyclost. semidecussatum *Pfeiffer*, l. c. 106. n. 63.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 17. 19.

Hab. Trinidad.

12. ? TROPIDOPHORA FULVESCENS.

Cyclost. fulvescens *Sow. Proc. Zool. Soc.* 1843, 63., *Thes. Conch.* i. 99. n. 23. t. 25. f. 79, 80.; *Pfeiffer, Zeitsch.* l. c. 106. n. 70.; *Kuster, Chemn. Conch. Cab.* 39. n. 30. i. 19. t. 5. f. 10, 11.

a. Madagascar.

13. ? TROPIDOPHORA PYROSTOMA.

Cyclost. pyrostoma *Sow. Thes. Conch.* i. 129. n. 108. t. 29. f. 200.; *Pfeiffer*, l. c. 106. n. 71.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 23.
Cyclost. hæmastoma *Grat.*

a, b. Mayotta.

14. TROPIDOPHORA RUGOSA.

Cyclost. rugosa *Lamck. An. s. Vert.* vi. 145. 2nd ed. viii. 356. n. 8.; *De Lessert, Rec.* t. 29. f. 7. a—c.?; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 15, 16.??
Cyclost. cinctum *Sow. Thes. Conch.* i. 129. n. 107. t. 29. f. 199.; *Pfeiff.* l. c. 106. n. 64.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 19. f. 6, 7.

Hab. E. Indies.

§§ *Peristome reflexed. Outer lip sinuous. Axis closed.*

15. TROPIDOPHORA FLEXILABRUM.

Cyclost. flexilabrum *Sow. Thes. Conch.* i. 130. n. 112. t. 31. f. 258, 259.; *Pfeiffer*, l. c. 106. 77.; *Kuster, Chemn. Conch. Cab.* 91. n. 87. t. 11. f. 7, 8.

a, b. Madagascar.

16. ? TROPIDOPHORA MULTIFASCIATUM.

Cyclost. multifasciatum *Grat.; Pfeiff.* l. c. 106. n. 68.

17. ? TROPIDOPHORA DUISABONIS.

Cyclost. Duisabonis *Grat.*; *Pfeiff.* l. c. 106. n. 66.

18. TROPIDOPHORA TERVERIANA.

Cyclost. Terveriana *Grat.*
Trop. Terveriana *Pfeiff.* l. c. 106. n. 7.

19. TROPIDOPHORA ABEILLEI.

Cyclost. Abeillei *Grat.*
Tropidoph. Abeillei *Pfeiffer*, l. c. 106. n. 3.

20. CYCLOSTOMUS.

Operculum shelly, few-whorled; whorls flat, last broad; nucleus excentric. — *Shell* globoso-conical, or conical-turrited, thin. Axis open, simple. Peristome simple or double, continued, straight or expanded.

Cyclostomus *Montf. Conch. Syst.* 1810; *Gray, Proc. Zool. Soc.* 1847, 181.
Cyclostome (Cyclostoma) *Lamck. Ext. du Cour.* 1812. not Syst. 1801; not Bosc, 1802; not Schum. 1817, 196.
Cyclostoma sp. *Lamck. Ann. Mus.* iv. 109. 212. 1803, *Phil. Zool.* 1804; *Drap. Hist.* 25. 28. 32. 1805; *Studer, Verz.* 21. 1820; *Hartmann, Sturm. Fauna,* 35. 1821, 1840; *Troschel* in *Menke, Zeitsch. f. Malak.* 1847, 43.; *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847, 104.
β. Leonia *Gray, Syn. Brit. Mus.* 1840 (*Cyclost. Volsii*).

§ *Peristome simple, slightly reflexed.*

* *Axis widely umbilicated. Shell globoso-conical.*

1. CYCLOSTOMUS LIGATUS.

Nerita ligata *Müller, Hist. Verm.* ii. 181. n. 368.
Turbo ligatus *Chemn. Conch. Cab.* ix. 60. t. 123. f. 1071–72.; *Wood, Ind. Test.* t. 32. f. 122.
Cyclostoma ligata *Lamck. An. s. Vert.* 2nd ed. viii. 359. n. 20.
Cyclost. ligatum *Sow. Thes. Conch.* i. 98. n. 21. t. 23. f. 24.; *Potiez et Mich. Gal. Moll. Douai*, 234. t. 23. f. 23, 24.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 4. f. 12. 15. t. 8. f. 3, 4., *Zeitsch.* l. c. 104. n. 8.; *Krauss, Sudafrik. Mollusk.* 82. n. 1.
Cyclophora ligata *Swainson, Malac.* 336.

a, b. —— ?
c—e. Syria?
f. Cape of Good Hope. From the Collection of Dr. Krauss.

Var. *Smaller.*

Cyclost. affine *Sow. Thes. Conch.* i. 98. n. 22. t. 23. f. 25, 26.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 62. n. 57. i. 19. t. 8. f. 17, 18., *Zeitsch.* l. c. 105. n. 9.

Cyclost. ligatum var. *Krauss, Sudafrik. Mollusk.* 82.

a—j. Cape of Good Hope. From the Collection of Dr. Krauss.

k—v. Simon's Bay, Cape of Good Hope. Presented by J. M'Gillivray, Esq.

w, x. —— ?

y, z. India. From the Collection of Capt. Boys.

2. CYCLOSTOMUS GOUDOTIANUS.

Cyclost. Goudotianum *Sow. Thes. Conch.* i. 130. n. 110. t. 29. f. 193.; *Pfeiffer, Zeitsch.* l. c. 106. n. 74.; *Kuster, Chemn, Conch. Cab.* i. 19. t. 13. f. 8. 10.

Cyclost. ligatum var. *Krauss, Sudafrik. Mollusk.* 82.

a. —— ? Var. of Cyclost. ligatum ?

b—d. Cape of Good Hope. From the Collection of Dr. Krauss.

** *Axis narrowly umbilicated.*

† *Shell subgloboso-conical.*

3. CYCLOSTOMUS CONSOCIUS.

Cyclost. consocium *Fer. MS. Brit. Mus.*

a—c. Madagascar.

4. CYCLOSTOMUS NOVÆ HIBERNIÆ.

Cyclost. Novæ Hiberniæ *Quoy & Gaim. Voy. Astr. Zool.* ii. 182. t. 12. f. 15. 19.; *Pfeiffer*, l. c. 106. 79.; *Lamck. An. s. Vert.* 2nd ed. viii. 368. n. 33.

Hab. New Ireland.

5. CYCLOSTOMUS LÆVIGATUS.

Cyclost. lævigatum *Webb & Berth. Ann. Sc. Nat.* 1833; *Sow. Thes. Conch.* i. 107. n. 49. t. 24. f. 62, 63.; *Pfeiff.* l. c. 105. n. 11.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 13. f. 13, 14. f. 23, 24. var.

Cyclost. canariense *D'Orb.*

Hab. Teneriffe.

6. CYCLOSTOMUS UNDULATUS.

Cyclost. undulatum *Sow. Thes. Conch.* i. 99. n. 25. t. 23. f. 29, 30.; *Pfeiff.* l. c. 105. n. 13.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 12. f. 24.-26.

? Cyclost. fimbriata *Lamck. An. s. Vert.* 2nd edit. viii. 360. n. 23.

Hab. Bengal.

†† *Shell conico-pyramidal.*

7. CYCLOSTOMUS VIRGATUS.

Cyclost. virgatum *Sow. Thes. Conch.* i. 130. n. 111. t. 29. f. 192.; *Pfeiffer*, l. c. 106. n. 75.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 13. f. 1—4. f. 5—7. var.

a—c. Madagascar?

8. CYCLOSTOMUS CINCINNUS.

Cyclost. cincinnus *Sow. Thes. Conch.* i. 102. n. 32. t. 24. f. 77, 78.; *Pfeiff.* l. c. 105. n. 12.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 18. f. 1—3.

? Cyclost. ligatulum *Gratel.*

Cyclost. modestum? *Fer.? MS.* in *Brit. Mus.*

a. Madagascar?

9. CYCLOSTOMUS TENUIS.

Cyclost tenue *Sow. Thes. Conch.* i. 138. n. 134. t. 31. f. 265.; *Pfeiffer*, l. c. 106. n. 76.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 25. f. 11.

a. —— ? Jun.?

§§ *Peristome simple, straight.*

* *Shell globoso-conical.*

10. CYCLOSTOMUS COSTULATUS.

Cyclost. costulatum *Ziegler MS.* in *Rossm. Icon. Moll.* vi. 49. n. 395. t. 28. f. 395.; *Potiez et Mich. Gal. Moll. Douai*, i. 234. t. 24. f. 1, 2.; *Crist. et Jan. Cat. Moll.* 6. n. 4.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 71. n. 66. i. 19. t. 9. f. 6—8., *Zeitsch.* l. c. 105. n. 17.

Cyclost. sulcatum *Olivier* (not Lamck.) *Voy. dans le Lévant*, in *Sow. Thes. Conch.* i. 100. n. 27. t. 23. f. 31.

Cyclost. Olivieri *Sow.; Pfeiffer, Kuster, Conch. Cab.* i. 19. t. 21. f. 20. 24., *Zeitsch.* l. c. 105. n. 16.; *Charpentier, Zeitsch. für Malak.* 1847, 144. n. 22.

Cyclost. syriacum *Ziegler*, fide *Parreyss*, *Charpent.* l. c.
Cyclost. orientale *Rossm.* ? fide *Parreyss.*

a. —— ?
b—f. Orient. From the Collection of M. Parreyss.
g. Egypt.
h. Syria.
i, j. —— ? From the Collection of M. Ziegler.

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11. CYCLOSTOMUS GLAUCUS.

Cyclost. glaucum *Sow. Thes. Conch.* i. 100. n. 28. t. 24. f. 69.; *Pfeiff.* l. c. 105. n. 18.; *Kuster, Chemn. Conch. Cab.* 72. n. 67. i. 19. t. 9. f. 3—5.
Cyclost. breviale *Gray MS. Brit. Mus.*
Cyclost. striatum *Menke, Synops.* ed. 11. p. 40. (absque descript.)

a. —— ? Mus. Sloane.

** *Shell conical, oblong.*

12. CYCLOSTOMUS ELEGANS.

Nerita elegans *Müller, Hist. Verm.* ii. 177. n. 363.; *Schröter, Fluss. Conch.* 366. t. 9. f. 15.
Turbo elegans *Gmel. S. N.* 3606. n. 74.; *Poiret, Prodr.* 31. n. 2.; *Pennant, Brit. Zool.* iv. 302. t. 85. f. 2.; *Dillwyn, Cat.* ii. 863. n. 116.; *Wood, Ind. Test.* t. 32. f. 118.
Cyclost. elegans *Drap. Hist. Moll.* t. 1. f. 5. and 7., *Tab. Moll.* 38. n. 1.; *Lamck. A. s. V.* 2nd ed. viii. 360. n. 25.; *Rossmassler, Icon.* i. 90. t. 2. f. 44. t. 5. f. 80—82.; *Potiez et Mich. Gal. Moll. Douai*, i. 235. n. 7.; *Féruss. Syst. Conch.* 66. n. 1.; *Turton, Manual*, 93. f. 75. edit. Gray, 275. t. 7. f. 75.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 73. n. 68. t. 9. f. 29—31. t. 28. f. 23.; *Zeitsch.* l. c. 105. n. 24.; *Sow. Thes. Conch.* i. 101. n. 30. t. 23. f. 32, 33.; *Bouillet, Cat. Coq. Foss. d'Anv.* 113. n. 1. (fossil); *Webb et Berth. Syn. Moll. Canar.* 17. n. 1.
Var. *β. Hartm.* in *Neue Alpina*, i. 215.
Turbo lincina *Chemn. Conch. Cab.* ix. t. 123. f. 1060. d, e.
Turbo striatus *Da Costa, Brit. Conch.* 86. t. 5. f. 9.
Turbo reflexus *Olivi, Adriat.* 170.
Columna de Purp. ch. 9. p. 16. t. 13.; *Lister, Hist. Conch.* t. 27. f. 25.

a—c. Genoa. From Dr. Goodall's Collection.
d, e. South of Italy. Presented by Sir W. Trevelyan, Bart.
f—h. —— ? From the Collection of M. Ziegler.
i—p. Pyrmont.
q. St. Girons, Cariége.
r—t. Dalmatia.
u—w. Syria. From the Collection of M. Parreyss.

x, y. ——? Var. white.
z—bb. Grignon. Fossil. From the Collection of M. Deshayes.

Var. *Small.*

Turbo marmoreus *Brown, Edin. Journ. Nat. and Geogr. Sc.* i.
Cyclost. marmoreum *Sow. Thes. Conch.* i. 101. n. 31. t. 23. f. 34, 35.; *Pfeiff.* l. c. 105. n. 25.

a, b. Near Edinburgh. From the Collection of Mr. Sowerby.

13. CYCLOSTOMUS SULCATUS.

Cyclost. sulcatum *Drap. Moll.* 33. n. 2. t. 13. f. 1.; *Philippi, Enum. Moll. Sic.* 144. n. 2.; *Rossm. Icon. Moll.* vi. 48. n. 394. t. 28. f. 394.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 67. n. 63. i. 19. t. 9. f. 24—26., *Zeitsch.* l. c. 105. n. 22.; *Risso, Hist. Nat. Eur. Merid.* n. 243.
Cyclost. sulcata *Lamck. An. s. Vert.* 2nd ed. viii. 370. n. 38.
Turbo lincina *Chemn. Conch. Cab.* ix. t. 123. f. 1060. b, c.
Cyclost. affinis *Risso, Nat. Hist. Eur. Merid.* iv. 104.
Cyclost. multisulcatum *Potiez & Mich. Gal. Moll. Douai*, i. 238. n. 13. t. 24. f. 11, 12.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 69. n. 64. i. 19. t. 9. f. 21—23., *Zeitsch.* l. c. 106. n. 53.
Cyclost. polysulcatum *Potiez & Mich.* l. c. 239. n. 16. t. 24. f. 13, 14.
Cyclost. aurantium *Anton, Verz.* 54. n. 1956.
Cyclost. siculum *Sow. Thes. Conch.* i. 104. n. 40. t. 24. f. 51, 52.
Cyclost. tenellum *Sow.* l. c. i. 104. n. 38. t. 24. f. 50.

a—l. ——?
m—q. Marseilles. Presented by Professor Roux.
r. ——?
s—w. Brignoles. Presented by G. Newman, Esq.
x, y. ——? From the Collection of Mr. Broderip.
z. Marseilles. Presented by Professor E. Forbes.
aa—dd. Oran.
ee—hh. Bougie. (Cyclost. tenellum *Sow.*)
ii—ll. ——? (Cyclost. tenellum *Sow.*)
mm. Sardinia. (Cyclost. tenellum *Sow.*) Presented by Professor Bonelli.
nn—pp. ——? (Cyclost. tenellum *Sow.*)

14. CYCLOSTOMUS MELITENSIS.

Cyclost. melitense *Sow. Thes. Conch.* i. 105. n. 41. t. 24. f. 53, 54.; *Pfeiffer, Kuster, Chemn. Conch.* i. 19. t. 13. f. 24—26., *Zeitsch.* l. c. 105. n. 23.

Var. of preceding?

a—d. Malta. Presented by J. Ritchie, Esq.

e, f. Malta.
g. Var. Malta. Presented by J. Ritchie, Esq.

**** Shell conical, elongate.*

15. CYCLOSTOMUS FERRUGINEUS.

Cyclost. ferruginea *Lamck. An. s. Vert.* vi. 147. n. 17., 2nd ed. viii. 358. n. 16.; *De Lessert, Rec. Coq.* t. 29. f. 4. a—c.
Cyclost. ferrugineum *Sow. Thes. Conch.* i. 105. n. 42. t. 24. f. 55—57.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 70. n. 65. i. 19. t. 9. f. 27, 28., *Zeitsch.* l. c. 105. n. 21.; *Mich. Coq. d'Algers*, ii. n. 2. f. 23.; *Potiez et Mich. Gal. Moll. Douai*, i. 236. t. 24. f. 7, 8.; *Rossmass. Icon. Moll.* vi. 49. n. 396. t. 28. f. 396.
Cyclost. fulvum *Gray* in *Wood's Cat. Supp.* 36.
Turbo fulvus *Wood's Cat. Supp.* t. 6. f. 9.
Cyclost. productum *Turton, Man.* 94. n. 76. f. 76.
Cyclost. sulcata (pars) *Desh., Lamck.* ed. viii. 370. n. 38.

a—c. Palma.
d—f. —— ? Mus. Cracherode.

16. CYCLOSTOMUS DISSECTUS.

Cyclost. dissectum *Sow. Thes. Conch.* i. 105. n. 43. t. 24. f. 58, 59.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 1, 2., *Zeitsch.* l. c. 105. n. 27.

Hab. —— ?

§§§ Peristome double, expanded.

** Shell globoso-conical. Suture simple.*

17. CYCLOSTOMUS ALBUS.

Cyclost. album *Sow. Thes. Conch.* i. 141. n. 139. t. 28. f. 154.; *Pfeiff.* l. c. 106. n. 57.; *Kuster, Chemn. Conch. Cab.* 51. n. 44. i. 19. t. 6. f. 17—19.

a—d. Jamaica. Presented by Professor C. B. Adams.
e—g. Jamaica. Var. fuscum. Presented by Prof. C. B. Adams.

*** Shell globoso-conical. Suture crenulate.*

18. CYCLOSTOMUS BRONNII.

Cyclost. Bronnii *Adams, Proc. Bost. Soc.* 1845, 11.; *Pfeiff.* l. c. 105. n. 38., *Zeitsch. Malak.* 1846, 46.; *Kuster, Chemn. Conch. Cab.* 50. n. 43. i. 19. t. 6. f. 24, 25.
β. fuscolineatum *Ad. Bost. Proc.* 1845, 11.?

a—d. Jamaica. Presented by Prof. C. B. Adams.
e—n. ——?

19. CYCLOSTOMUS PYGMÆUS.

Cyclost. pygmæum *Mich. Compl. à Drap.* 75. n. 3. t. 15. f. 46, 47.; *Potiez et Mich. Gal. Moll. Douai*, i. 240. n. 17. t. 24. f. 15—17.
Cyclost. pygmæa *Lamch. An. s. Vert.* 2nd ed. viii. 373. n. 44.

Hab. South of France.

21. TUDORA.

Operculum shelly, flat, of few whorls concentrically striated (*Potiez*, figure). — *Shell* ovate. Peristome much expanded, slightly reflexed, especially on inner edge, where it nearly conceals the umbilicus.

Differs from *Choanopoma* in having no appearance of the inner of the two lips.

1. TUDORA SIMILIS.

Cyclost. megacheilos *Potiez & Mich. Moll. Gal. Douai*, i. 237. t. 24. f. 9, 10.; *Pfeiffer*, l. c. 106. n. 55.
Cyclost. megachilum *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* 66. n. 62. i. 19. t. 9. f. 15—19.
Cyclost. simile *Gray MS.* in *Sow. Thes. Conch.* i. 103. n. 37. t. 24. f. 48, 49.

a—g. Orient.

22. CHOANOPOMA.

Operculum calcareous, thin, externally deeply concave; the whorls rather narrow, terminating externally in more or less prominent thin lamellæ, with a subcentral nucleus. — *Shell* turbinate, globose, or turrited, often truncate. Peristome double; the internal continuous, circular; the external rectangular, expanded.

Choanopoma *Pfeiffer* in *Menke und Pfeiffer*, *Z. f. Malak.* 1847, 47. and 107.
Cistula *Humph. Mus. Calonne*, 1797; *Swainson*, *Malac.* 21. 1840.
Licina β. *Gray*, *Syn.* 1840, 1842, 91., *Proc. Zool. Soc.* 1847, 181.

§ *Lamellæ of whorls of operculum very prominent.*

* *Shell subglobose, cancellate.*

† *Fringe crenated.*

1. CHOANOPOMA PULCHRUM.

Turbo pulcher *Wood, Cat. Supp.* t. 6. f. 4.
Cyclost. pulchrum *Gray* in *Wood's Cat. Supp.* 36.; *Sow. Gen.* n. 35. f. 2., *Spec. Conch.* f. 134, 135., *Thes. Conch.* i. 132. n. 117. t. 27. f. 143, 144.; *Reeve, Conch. Syst.* t. 184. f. 12.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 75. n. 69. i. 19. t. 10. f. 1, 2.
Cyclophora pulchra *Swains. Malacol.* 336.
Choanopoma pulchrum *Pfeiffer*, l. c. 107. n. 1.

a, b. —— ?

2. CHOANOPOMA FIMBRIATULUM.

Cyclost. fimbriatulum *Sow. Tank. Cat. App.* 8. n. 1015., *Spec. Conch.* f. 136., *Thes. Conch.* i. 132. n. 118. t. 28. f. 145, 146.; *Reeve, Conch. Syst.* t. 183. f. 5.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 76. n. 70. i. 19. t. 10. f. 3—5.
Turbo lincina *Chemn. Conch. Cab.* ix. 54. t. 123. f. 1060. a.
Annularia fimbriata *Schumach. Ess. Nov. Syst.* 196.?
Choanopoma fimbriatulum *Pfeiffer*, l. c. 107. n. 7.

a, b. —— ?

3. CHOANOPOMA LINCINUM.

Turbo lincina *Linn. Syst. Nat.* ed. 12. i. 1239. n. 639.; *Schröter, Einleitung*, ii. 43. n. 35.; *Gmel. Linn. Syst. Nat.* 3605. n. 71.; *Dillw. Cat.* ii. 864. n. 117.; *Wood, Cat.* t. 32. f. 119.?
Cyclost. lincinum *Sow. Thes. Conch.* i. 140. n. 138. t. 28. f. 148.; *Pfeiffer, Chemn. Conch. Cab.* 43. n. 34. i. 19. t. 6. f. 1, 2.
Cyclost. lincina *Lamck. An. s. Vert.* 2nd edit. 368. n. 32.
Nerita licinia *Müller, Hist. Verm.* ii. 178. n. 364.? *Schröter, Fluss. Conch.* 365.
Campulote en forme de Buccin, *Guettard, Mém. Sc. et Arts*, iii. 542. t. 71. f. 10.
Choanopoma lincina *Pfeiffer*, l. c. 107. n. 3.
Lister, Hist. Conch. t. 26. f. 24.; *Petiver, Gazoph.* t. 118. f. 11.; *Sloane, Jamaica*, ii. 240. f. 12, 13.; *Browne, Jamaica*, t. 40. f. 5.

a, b. Jamaica. Presented by Professor C. B. Adams.
c. —— ?

4. CHOANOPOMA SCABRICULUM.

Cyclost. scabriculum *Sow. Thes. Conch.* i. 133. n. 119. t. 28. f. 147.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 77. n. 71. i. 19. t. 10. f. 6—8.
Choanopoma scabriculum *Pfeiffer*, l. c. 107. p. 8.

a—c. Jamaica.
d, e. —— ?

†† *Fringe of mouth simple.*

5. CHOANOPOMA LIMA.

Cyclost. lima *Adams, Proc. Bost. Soc.* 1845, 11.; *Pfeiffer, Zeitsch. für Malak.* 1846, 46.; *Kuster, Chemn. Conch. Cab.* 44. n. 35. i. 19. t. 6. f. 3—6.
Cyclost. lincinum (pars) *Sow. Thes. Conch.* t. 28. f. 149.
Choanopoma lima *Pfeiffer*, l. c. 107. n. 2.

a, b. Jamaica. Presented by Professor C. B. Adams.

6. CHOANOPOMA OTTONIS.

Cyclost. Ottonis *Pfeiffer, Zeitsch. für Malak.* 1846, 45.; *Kuster, Chemn. Conch. Cab.* 45. n. 36. i. 19. t. 6. f. 7, 8.
Choanopoma Ottonis *Pfeiffer*, l. c. 107. n. 7.

Hab. Cuba.

7. CHOANOPOMA LATILABRE.

Cyclost. latilabrum *D'Orb. Cub.* i. 255. t. 21. f. 12.; *Sow. Thes. Conch.* i. 131. n. 116. t. 31. f. 281.; *Pfeiffer*, l. c. 104. n. 43.; *Kuster, Chemn. Conch. Cab.* 78. n. 7. i. 19. t. 10. f. 26, 27.

Hab. —— ?

8. CHOANOPOMA PUDICUM.

Cyclost. pudicum *D'Orb. Sow. Thes. Conch.* i. 143. n. 147. t. 31. f. 282.
Choanopoma pudicum *Pfeiffer*, l. c. 107. n. 5.

Hab. Cuba.

9. CHOANOPOMA AMBIGUUM.

Cyclost. ambigua *Lamck. An. s. Vert.* vi. 2nd ed. viii. 357. n. 11.; *Pfeiffer*, l. c. 105. 449.
Cyclost. interrupta *De Lessert, Recueil*, t. 29. f. 2. a—c.

Hab. —— ?

** *Shell elongate.*

† *Fringe crenated.*

10. CHOANOPOMA SAULIÆ.

Cyclost. Sauliæ *Sow. Thes. Conch.* i. 145. n. 152. t. 28. f. 189.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 85. n. 80. i. 19. t. 10. f. 24, 25., *Zeitsch.* l. c. 106. n. 60.

a—c. —— ?

11. CHOANOPOMA DISLOCATUM.

Smaller than preceding; last whorl separated.

a—g. Jamaica. Presented by the Rev. Barham Zincke.

12. CHOANOPOMA SCABROSUM.

Cyclost. rugulosum *Sow.* (not Pfeiff.) *Thes. Conch.* i. 146. n. 155. t. 28. f. 166, 167.; *Sow.* in *Proc. Zool. Soc.* 1843, 29.?
Cistula scabrosa *Humphrey MS.* in *Sow. Thes.* l. c.

a—c. Jamaica. From the Collection of Mr. Cuming.

13. CHOANOPOMA PETREI.

Cyclost. Petrei *D'Orb. Sow. Thes. Conch.* i. 139. n. 136. t. 31. f. 260.; *Pfeiffer*, l. c. 106. n. 62.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 9—12.

Hab. Cuba.

†† *Fringe of mouth simple.*

14. CHOANOPOMA LARGILLIERTI.

Cyclost. Largillierti *Pfeiffer, Zeitsch. für Malak.* 1836, 46, l. c. 105. n. 36.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 26, 27.

Hab. Yucatan.

15. CHOANOPOMA MAURITIANUM, sp. nov.?

Cyclostoma crenulatum *Fér.* fide *Parreyss, MS. Brit. Mus.*

a. Isle of France. From the Collection of M. Parreyss.

*** *Shell oblong. Fringe of mouth simple.*

16. CHOANOPOMA MIRABILE.

Turbo mirabilis *Wood, Cat. Supp.* t. 6. f. 22.
Cyclost. mirabile *Gray* in *Wood's Cat. Supp.* 36.; *Sow. Thes. Conch.* i. 145. n. 153. t. 28. f. 164.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 17—19.

Cyclost. mirabilis *Lamck. An. s. Vert.* 2nd ed. viii. 371. n. 40.
Choanopoma mirabile *Pfeiffer*, l. c. 107. n. 9.
Hab. Demerara.

17. CHOANOPOMA ARTICULATUM.

Cyclost. articulatum *Sow. Thes. Conch.* i. 142. n. 144. t. 28. f. 160, 161.
Choanopoma articulatum *Pfeiffer*, l. c. 107. n. 10.
Var. of Choan. mirabile?
a—c. ——?
d, e. Jamaica. Presented by Prof. C. B. Adams.
f, g. Jamaica. Var. nearly smooth. Presented by Prof. C. B. Adams.
h—j. ——? From the Collection of Mr. Cuming.

18. CHOANOPOMA GRAYANUM.

Cyclost. obscurum *Gray MS.* in *Sow. Thes. Conch.* i. 147. n. 157. t. 28. f. 169.
Cyclost. Grayanum *Pfeiffer, Zeitsch. f. Malak.* 1846, 43.; *Kuster, Chemn. Conch. Cab.* 49. n. i. 19. 42. t. 6. f. 15, 16.
Choanopoma Grayanum *Pfeiffer*, l. c. 107. n. 11.
a—c. Jamaica. Presented by Prof. C. B. Adams.

19. CHOANOPOMA BANKSIANUM.

Cyclost. Banksianum *Sow. Thes. Conch.* i. 144. n. 148. t. 29. f. 194.; *Pfeiff.* l. c. 105. n. 39.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 7, 8.
Hab. Manchester Mountains, Jamaica.

20. CHOANOPOMA BINNEYANUM.

Cyclost. Binneyanum *Adams, Pfeiff. Zeitsch f. Malak.* 1846, 47., l. c. 106. n. 51.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 12—14.
Cyclost. pulchrius? *Adams, Proc. Bost. Soc.* 1845.
a—c. Jamaica. Presented by Prof. C. B. Adams.

21. CHOANOPOMA HILLIANUM.

Cyclost. Hillianum *Adams.*
Choanopoma Hillianum *Pfeiffer*, l. c. 107. n. 12.
Hab. Jamaica.

22. CHOANOPOMA? BILABIATUM.

Cyclost. bilabiatum *D'Orb., Pfeiffer*, l. c. 106. n. 50.

23. CHOANOPOMA XANTHOSTOMA.

Cyclost. xanthostoma *Sow. Thes. Conch.* i. 144. n. 149. t. 29. f. 195.; *Pfeiffer*, l. c. 105. n. 47.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 6—8.

a—c. Jamaica. From the Collection of Mr. Gosse
d—g. ——?

24. CHOANOPOMA CHLOROSTOMA.

Cyclost. chlorostoma *Sow. Thes. Conch.* i. 146. n. 156. t. 28. f. 168.; *Pfeiff.* l. c. 106. 52.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 1—3.

a, b. Demerara. From Mr. Bainbridge's Collection.

§§ *Lamellæ of whorls of operculum slightly prominent.*
* *Last whorl of shell not separate from preceding.*

25. CHOANOPOMA HUMPHREYANUM.

Cyclost. Humphreysianum *Pfeiff. Wiegm. Archiv.* 1839, *Zeitsch. f. Malak.* 1846, 41.
Cyclost. Humphreyanum *Pfeiffer, Zeitsch.* 1847, 105. n. 46.; *Kuster, Chemn. Conch. Cab.* 80. n. 74. i. 19. t. 10. f. 9—11.
Cyclost. pictum *Sow. Thes. Conch.* i. 142. n. 142. t. 28. f. 157, 158.
Cistula picta *Humph. MS. ined.* in *Sow.* l. c.

Near *thysanoraphe.*

a—k. Jamaica. Presented by the Rev. Barham Zincke.
l. ——? From Mr. Powis's Collection.
m. ——? Running into *C. thysanoraphe.* From Mr. Powis's Collection.

26. CHOANOPOMA THYSANORAPHE.

Cyclost. thysanoraphe *Sow. Thes. Conch.* i. 143. n. 145. t. 28. f. 162, 163.; *Pfeiff.* l. c. 105. n. 31.; *Kuster, Chemn. Conch. Cab.* 81. n. 75. i. 19. t. 10. f. 16—18. t. 13. f. 28, 29.

a—c. Jamaica.
d, e. Jamaica. Presented by Prof. C. B. Adams.

27. CHOANOPOMA INTERRUPTUM.

Cyclost. interrupta *Lamck. An. s. Vert.* vi. 145. 2nd ed. viii. 356. n. 10.
Cyclost. interruptum *Sow. Thes. Conch.* i. 141. n. 141. t. 28. f. 152, 153.; *Pfeiffer*, l. c. 104. n. 42.; *Kuster, Chemn. Conch. Cab.* 63. n. 58. i. 19. t. 9. f. 1, 2.

Cyclost. ambigua *De Lessert, Recueil*, t. 29. f. 5.; *Reeve, Conch. Syst.* t. 183. f. 8.

a—c. ——?

Var. *Small.*

Turbo Chemnitzii *Wood, Cat. Supp.* t. 6. f. 6.
Cyclost. Chemnitzii *Gray* in *Wood's Cat. Supp.* 36.; *Sow. Thes. Conch.* i. 141. n. 140. t. 28. f. 155, 156.; *Pfeiffer*, l. c. 106. n. 58.; *Kuster, Chemn. Conch. Cab.* 92. n. 88. i. 19. t. 32, 33.

a—c. ——? From the Collection of Mr. Powis.
d. ——?

** *Last whorl separated from the preceding.*

28. CHOANOPOMA LINCINELLUM.

Cyclost. lincinella *Lamck. An. s. Vert.* vi. 148. 2nd ed. viii. 359. n. 21.
Cyclost. lincinellum *Sow. Thes. Conch.* i. 140. n. 137. t. 28. f. 150, 151.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 3—5.
Turbo compressus *Wood, Cat. Supp.* t. 6. f. 42.
Cyclost. compressum *Gray* in *Wood's Cat. Supp.* 36.
Cyclost. lincina *Lamck. Enc. Méth.* t. 461. f. 2. a, b.
Choanopoma lincinella *Pfeiffer*, l. c 107. n. 4.

Hab. Jamaica.

29. CHOANOPOMA SEMIPRODUCTUM.

a, b. ——?

23. DIPLOMMATINA.

Operculum shelly, thin; whorls few, with thin prominent lamellæ on their external edges.—*Shell* thin, subovate; whorls convex, last subascendent. Mouth nearly circular. Peristome double, outer expanded.

Diplommatina *Benson, Ann. and Mag. Nat. Hist.* 1849, 193.
Carychium (sp.) *Hutton MS.*
Bulimus sp. *Pfeiffer, Helicidæ*, ii. 81.

§ *Apex elongate, conical.*

1. DIPLOMMATINA FOLLICULUS.

Diplommatina folliculus *Benson, Ann. and Mag. N. H.* 1849, 194.
Carychium costatum *Hutton MS. Brit. Mus.*
Diplommatina folliculus *Pfeiffer, Mon. Helicidæ*, ii. 81.

a—f. India; Simla, near Sutlej. From Mr. Hutton's Collections. Carychium costatum *Hutton.*
g—ii. (With operculum.) Landour. From the Collection of Capt. Boys.

§§ *Apex blunt.*

2. DIPLOMMATINA COSTULATUM.

Carychium costulatum *Hutton MS.*
Diplommatina costulatum *Benson*, l. c. 194.
Carychium parvulum *Boys MS. Brit. Mus.*

Probably only a smaller variety of the preceding.

a—x. (With operculum.) Landour. From the Collection of Capt. Boys.

3. ?DIPLOMMATINA MINUS.

Cyclost. minus *Sow. Thes. Conch.* i. 153. n. 175. t. 30. f. 249.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* i. 19. t. 17. f. 9—11., *Zeitsch.* l. c. 112. n. 6.

a—d. Zebu, Philippine Islands. From the Collection of Mr. Cuming.

24. CHONDROPOMA.

Operculum ovate, subcartilaginous; whorls few, rapidly increasing. — *Shell* for the most part turrited, often truncated. Peristome continuous, for the most part free, simple, single; expanded or thickened.

Differs from Cyclostomus in the operculum being thinner and somewhat horny.

Chondropoma *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847.

§ *Shell turrited.*

1. CHONDROPOMA LIMBIFERUM.

Cyclost. limbiferum *Menke MS.* in *Pfeiffer, Zeitsch. für Malak.* 1846, 45.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 46. n. 38. i. 19. t. 6. f. 11, 12. t. 21. f. 6.
Cyclost. catenatum *Gould, Bost. Journ.* iv. 1. 1842 ?
Chondropoma limbiferum *Pfeiffer*, l. c. 109. n. 4.

Hab. Cuba.

2. CHONDROPOMA SEMILABRE.

Cyclost. semilabris *Lamck. An. s. Vert.* vi. 2nd ed. viii. 357. n. 12.; *De Lessert, Recueil*, t. 29. f. 1. a, b.

Cyclost. semilabrum *Sow. Thes. Conch.* i. 106. n. 44. t. 24. f. 60.;
Cyclost. semilabre *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 15. f. 17, 18.
Cyclost. sagra *D'Orb.* (fide *Pfeiffer.*)
Cyclost. punctulata *Gould.*
Chondropoma semilabre *Pfeiffer*, l. c. 109. n. 2.

Hab. Cuba.

Var.

Cyclost. sagra *Sow. Thes. Conch.* i. 150. n. 166. t. 31. f. 279, 280.
Cyclost. pictum *Pfeiffer*, *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 15. f. 1—11.; *Pfeiffer*, l. c. 109. n. 1.
Cyclost. mahogani *Gould.*
β. minus (Cyclost. Poyeana *D'Orb.*)
Chondropoma pictum *Pfeiffer*, l. c. 109. n. 1.

a—f. Cuba.

3. CHONDROPOMA PLICATULUM.

Cyclost. plicatulum *Pfeiffer*, *Zeitsch. Malak.* 1846, 48.; *Kuster*, *Chemn. Conch. Cab.* 82. n. 77. i. 19. t. 10. f. 14, 15. t. 28. f. 12, 13.
Chondrop. plicatulum *Pfeiffer*, l. c. 109. n. 3.

Hab. Puerto Caballo, Venezuela.

4. CHONDROPOMA OBESUM.

Cyclost. obesum *Pfeiffer*, *Wiegm. Archiv.* 1840, i. 253.; *Kuster*, *Chemn. Conch. Cab.* 83. n. 78. i. 19. t. 10. f. 21—23.; *Sow. Thes. Conch.* i. 143. n. 146. t. 31. f. 278.
Truncatella obesa *Menke*, *Synops.* 2nd ed. 137.
Chondropoma obesum *Pfeiffer*, l. c. 109. n. 5.

Hab. Cuba.

5. CHONDROPOMA HELLENICUM.

a. Greece. Presented by C. Lamb, Esq.

6. CHONDROPOMA CRENULATUM.

Cyclost. crenulatum *Pfeiffer*, *Wiegm. Archiv.* 1839; *Kuster*, *Chemn. Conch. Cab.* i. 19. t. 14. f. 24, 25. 30, 31. var.
Cyclost. Auberianum *D'Orb.* in *Sow. Thes. Conch.* i. 144. n. 150. t. 31. f. 285.
Cyclost. lineolatum *Ant.*
Chondrop. crenulatum *Pfeiffer*, l. c. 109. n. 6.

a—c. Cuba. From Mr. Cuming's Collection.

§§ *Shell suborbicular, solid.*

7. CHONDROPOMA FLAVUM.

Cyclost. flavum *Brod. Proc. Zool. Soc.* 1832, 59.; *Müller, Synops.* 38.; *Sow. Thes. Conch.* i. 109. n. 55. t. 24. f. 70.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 23. n. 14. i. 19. t. 3. f. 9, 10. magn. f. 11., *Zeitsch.* l. c. (an Littorina?) 112. n. 3.

a—d. Chain Island, South Seas. From the Collection of Mr. Cuming.

25. CISTULA.

Operculum ovate, thin, horny, with a very thin external shelly coat; whorls few, gradually enlarging, flat, edge simple, centre rather concave. — *Shell* ovate elongate, or conico-turrited. Mouth subcircular. Peristome double, or simple with subexpanded margin.

Licina *Browne, Jamaica*, 1756; *Gray, Proc. Zool. Soc.* 1847, 181.
Cyclostoma *Swainson, Malac.* 1840 (not Lamck. 1801).
Annularia β. *Schum. N. Syst.* 1817.

§ *Peristome double.*

* *Shell conico-turrited.*

1. CISTULA FASCIA.

Turbo fascia *Wood, Cat. Supp.* t. 6. f. 8.
Cyclost. fascia *Gray* in *Wood's Cat. Supp.* 36.; *Pfeiffer*, l. c. 105. n. 30.; *Kuster, Chemn. Conch. Cab.* 45. n. 37. i. 19. t. 6. f. 9, 10.; *Sow. Thes. Conch.* i. 149. n. 164. t. 28. f. 176, 177.

a—c. Jamaica.
d, e. Jamaica. Presented by Professor C. B. Adams.
f, g. Jamaica.

2. CISTULA COLUMNA.

Turbo columna *Wood, Cat. Supp.* t. 6. f. 21.
Cyclost. columna *Gray* in *Wood's Cat. Supp.* 36.; *Lamck. An. s. Vert.* 2nd edit. 372. n. 41.; *Pfeiffer*, l. c. 105. 45.; *Kuster, Chemn. Conch. Cab.* 47. n. 39. i. 19. t. 6. f. 13, 14.

a, b. Jamaica. Presented by Professor C. B. Adams.
c—f. Jamaica. Jun. Presented by Rev. Barham Zincke.

Var. *Suture crenulated.*

Cyclost. Adamsi *Pfeiffer*, l. c. 105. n. 35., *Zeitsch. Malak.* 1846, 43.; *Kuster, Chemn. Conch. Cab.* 48. n. 40. i. 19. t. 6. f. 20, 21.

Cyclost. crenulatum *Gray MS.* in *Sow. Thes. Conch.* i. 148. n. 113. t. 28. f. 174, 175.

a—e. Jamaica. Presented by Professor C. B. Adams.
f—h. Jamaica.

3. CISTULA VERSICOLOR.

Cyclost. versicolor *Pfeiffer, Zeitsch. Malak.* 1846, 33., l. c. 105. n. 26.; *Kuster, Chemn. Conch. Cab.* 65. n. 60. i. 19. t. 9. f. 13, 14. (not Grat.)
Turbo aurantius *Wood, Cat. Supp.* t. 6. f. 23.
Cyclost. aurantium *Gray* in *Wood's Cat. Supp.* 36.
Cyclost. aurantiacum *Sow. Thes. Conch.* i. 103. n. 36. t. 24. f. 46, 47.

a—f. Jamaica. Presented by Professor C. B. Adams.

4. ?CISTULA COSTATA.

Cyclost. costatum *Menke MS.* in *Pfeiffer, Zeitsch. Malak.* 1846, 47.; *Pfeiffer*, l. c. 106. n. 54.; *Kuster, Chemn. Conch. Cab.* 64. n. 59. i. 19. t. 9. f. 9, 10.

Hab. ?

5. CISTULA LINEOLATA.

Cyclost. lineolata *Lamck. An. s. Vert.* vi. 147. n. 19. 2nd edit. viii. 358.; *De Lessert, Recueil*, t. 29. f. 8.
Cyclost. lineolatum *Pfeiffer*, l. c. 105. n. 48.; *Kuster, Chemn. Conch. Cab.* 49. n. 41. t. 6. i. 19. f. 27, 28.

a—q. St. Vincent's, West Indies. From the Collection of Rev. Landsdown Guilding.
r—t. ——?

6. ?CISTULA DECUSSATA.

Cyclost. decussata *Lamck. An. s. Vert.* vi. 2nd ed. viii. 358. n. 17.; *De Lessert, Recueil*, t. 29. f. 6. a—c.
Cyclost. decussatum *Pfeiffer*, l. c. 106. n. 56.

Hab. Porto Rico.

7. CISTULA TRUNCATA.

Cyclost. truncatum *Mus. Berol. Rossmass. Iconograph.* vi. 49. t. 28. f. 397.; *Pfeiffer*, l. c. 105. n. 34.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 20, 21.
Cyclost. candeanum *D'Orb. Sow. Thes. Conch.* i. 145. n. 151. t. 31. f. 283, 4.

Hab. Cuba.

8. CISTULA DELATREANA.

Cyclost. Delatreanum *D'Orb. Pfeiff.* l. c. 105. n. 33.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 22, 23.

** *Shell cylindrical.*

9. CISTULA RUFILABRIS.

Cyclost. rufilabrum *Beck. MS.* in *Sow. Thes. Conch.* i. 106. n. 45. t. 24. f. 61.; *Pfeiff.* l. c. 106. n. 57.; *Kuster, Chemn. Conch. Cab.* (in plate) t. 6. f. 22, 23.; *Potiez et Mich. Gal. Moll. Douai*, i. 241. t. 24. f. 20, 21.

Cyclost. bilabre *Menke, Moll. Nov. Holl.* 8.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* (in letter-press) 52. n. 45.

a, b. —— ?
c. Orient.

10. CISTULA RUGULOSA.

Cyclost. rugulosum *Pfeiffer, Wiegm. Archiv*, 1839, *Zeitsch.* l. c. 106. n. 61.

Cyclost. clathratum *Gould.*

a—c. Cuba. From the Collection of Mr. Cuming.
d, e. —— ? Presented by E. Doubleday, Esq.
f—o. —— ?

11. ? CISTULA GRUNERI.

Cyclost. Gruneri *Pfeiffer, Zeitsch. Malak.* 1846, 47., l. c. 105. n. 44.; *Kuster, Chemn. Conch. Cab.* 79. n. 73. i. 19. t. 10. f. 28, 29.

Hab. Honduras.

§§ *Peristome single. Shell nearly cylindrical.*

12. CISTULA QUATERNATA.

Cyclost. quaternata *Lamck. An. s. Vert.* vi. 147. 2nd edit. viii. 358. n. 15.; *De Lessert, Recueil*, t. 29. f. 3. a. c.

Cyclost. quaternatum *Pfeiff.* l. c. 105. n. 19.; *Kuster, Chemn. Conch. Cab.* 81. n. 77. i. 19. t. 10. f. 12, 13.; *Sow. Thes. Conch.* i. 149. n. 165. t. 28. f. 178, 179.

Cyclost. pupaceum *Sow. MS. Cab. Gray.*

a, b. —— ?

13. CISTULA PUPIFORMIS.

Cyclost. pupiforme *Sow. Thes. Conch.* i. 102. n. 34. t. 24. f. 43,

44.; *Pfeiff.* l. c. 105. n. 32.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 15, 16.

Hab. —— (Cab. Gray?)

14. CISTULA ELONGATA.

Turbo elongatus *Wood, Cat. Supp.* t. 6. f. 10.

Cyclost. elongatum *Gray* in *Wood's Cat. Supp.* 36.; *Sow. Thes. Conch.* i. 107. n. 50. t. 24. f. 64.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 84. n. 79. i. 19. t. 10. f. 19, 20., *Zeitsch.* l. c. 105. n. 28.

a. ——?

b—d. West Indies. Var.? with suture crenulated?

15. ?CISTULA SOLIDA.

Cyclost. solidum *Menke, Pfeiff.* l. c. 105. n. 29.; *Kuster, Chemn. Conch. Cab.* i. 19. t. 14. f. 4, 5.

26. LICINA.

Operculum ——?

Shell conical; last whorl produced out of the spiral line, straight. Mouth circular. Peristome somewhat reflexed, expanded.

Licina *Browne, Jamaica*, 401.

1. LICINA LABEO.

Nerita labeo *Müller, Hist. Verm.* ii. 180. n. 367.; *Schröter, Fluss-Conch.* 364.

Turbo labeo *Gmel. Syst. Nat.* 3605. n. 73.; *Dillw. Cat.* ii 865. n. 118.; *Wood, Cat.* t. 32. f. 120.

Turbo lincina magna *Chemn. Conch. Cab.* ix. 56. t. 123. f. 1061, 1062.

Turbo lincina *Born, Test.* 355. t. 13. f. 5, 6.

Turbo dubius *Gmel. Syst. Nat.* 3606. n. 75.

Cyclostoma labeo *Lamck. An. s. Vert.* vi. 145. 2nd ed. viii. 356. n. 9., *Enc. Méth.* t. 461. f. 4.; *Desh. Enc. Méth. Vers*, ii. 40. n. 5.; *Féruss. Syst. Conch.* 66. n. 3.; *Sow. Thes. Conch.* i. 146. n. 154. t. 28. f. 165.; *Pfeiffer, Kuster, Chemn. Conch. Cab.* 34. n. 25. i. 19. t. 4. f. 1, 2. t. 9. f. 20., *Zeitsch.* l. c. 105. n. 40.

Buccinum *Lister, Hist. Conch.* t. 25. f. 23.; *Schröter, Einleit. Turbo*, n. 60.

Licina rugosa *Browne, Jamaica*, 401. t. 40. f. 5—7.

a, b. ——? From the Sloane Museum.

2. LICINA EVOLUTA.

Cyclost. evolutum *Reeve*, *Pfeiffer*, l. c. 105. n. 41.
Cyclost. subasperum *Sow. Thes. Conch.* i. 142. n. 143. t. 28. f. 159.
Cistula decussata *Humph. MS. ined. Sow.* l. c.

Hab. East Indies.

b. *Operculum thin, few-whorled; front of last whorl rounded.*

27. POMATIAS.

Operculum thin, shelly, few-whorled, composed of two plates, concamerated within.—*Shell* somewhat imperforate, conico-turrited or turrited, longitudinally striated or ribbed. Peristome nearly simple or double, the internal edge continuous, the external reflexed.

Pomatias *Studer*, *Verz.* 21. 1820; *Hartmann*; *Gray*, *Syn. B. M.* 1842, 91., *Proc. Zool. Soc.* 1847, 182.; *Troschel* in *Menke und Pfeiffer*, *Z. f. Malak.* 1847, 43.
Cyclostoma sp. *Drap. Lamck. Hist. An. s. Vert.*

§ *Peristome eared.*

1. POMATIAS AURITUS.

Cyclostoma auritum *Ziegler MS.* in *Rossmass. Iconograph.* vi. 50. t. 28. f. 398.; *Sow. Thes. Conch.* i. 148. n. 162. t. 28. f. 172.
Cyclost. excissilabrum *Megerle* (fide *Crist. & Jan.*) in *Potiez et Mich. Gal. Moll. de Douai*, i. 236. n. 9. t. 24. f. 5, 6.
Pomatias auritus *Pfeiffer*, l. c. 110. n. 1.

a—c. Albania.
d—k. —— ?
l—r. Dalmatia. Presented by Charles Lamb, Esq.

2. POMATIAS MACULATUS.

Cyclostoma maculatum *Drap. Moll.* 39. n. 13. t. 1. f. 12.; *Sturm*, *Faun.* vi. 47. t. 3.; *Stud. Verz.* 22.; *Pfeiffer*, *Syst. Anord.* iii. 43. t. 7. f. 30.; *Rossmass. Iconog.* vi. 51. t. 28. f. 399, 400.; *Potiez et Mich. Gal. Moll. Douai*, i. 239. n. 15. var. A. maj. = Cyclost. tessellatum *Ziegler*, *Desm. Cat. Moll. de Gironde*, 18., n. 2.
Cyclost. affinis *Parreyss MS.* in *Brit. Mus.*
Cyclost. turriculatum *Philippi*, *Enum. Moll. Sic.* 144.
C. turriculatum a. *Menke*, *Synops.* 40.
Cyclost. tessellatum *Sow. Thes. Conch.* i. 147. n. 158. t. 28. f. 173.
Cyclost. striolatum *Sow. Thes. Conch.* i. t. 31. f. 286.

Pomatias Studeri β. *Hartmann*, § 214. n. 5.
Pomatias maculatus *Pfeiffer*, l. c. 110. n. 6.

a—d. Corfu.
e, f. Syria (C. affinis). Var. *Rossmass.* From the Collection of M. Parreyss.
g—x. ——? From the Collection of M. Ziegler.

3. POMATIAS TESSELLATUS.

Cyclostoma tessellatum *MS.* in *Berlin Museum*, fide *Rossmass. Iconograph.* vi. 53. t. 28. f. 404.
Pomatias tessellatus *Pfeiffer*, l. c. 110. n. 2.

Hab. Corfu.

4. POMATIAS CINERASCENS.

Cyclostoma cinerascens *Rossmass. Iconograph.* vi. 53. t. 28. f. 406.
Pomatias cinerascens *Pfeiffer*, l. c. 110. n. 7.

Hab. Dalmatia.

5. POMATIAS PATULUS.

Cyclostoma patulum *Drap. Moll.* 38. t. 1. f. 9—11.; *Lamck. An. s. Vert.* 2nd edit. viii. 362. n. 26.; *Rossmass. Iconog.* vi. 52. t. 28. f. 401, 402, 403. vars., *Col. des Ch. Cat. des Coq. du Finist.* 71. n. 2.
Cyclost. turriculatum b. majus unicolor *Menke, Synops.* 40.
Cyclost. obscurum var. major *Drap. Moll.* 39. n. 14. t. 1. f. 13.?
Pomatias patulus *Pfeiffer*, l. c. 110. n. 5.

a—f. Provence.
g—p. Grasse, South of France. Presented by G. Newman, Esq.
q. Perpignan, France.
r—t. Styria.

§§ *Peristome simple.*

6. POMATIAS OBSCURUS.

Cyclostoma obscurum *Drap. Moll.* 39. t. 1. f. 13.; *Rossmass. Iconograph.* vi. 53. t. 28. f. 405.
Cyclost. patulum *Sow. Thes. Conch.* i. 147. n. 159. t. 28. f. 170.
Cyclost. maculatum *Sow. Thes. Conch.* i. t. 28. f. 171.
Pomatias obscurus *Pfeiffer*, l. c. 110. n. 3.

a—c. Pyrenees.
d—h. ——?
i—m. Naples. Presented by S. P. Pratt, Esq.
n, o. Dauphiny. Presented by Professor E. Forbes.

7. POMATIAS STRIOLATUS.

Cyclostoma striolatum *Porro*, *Rev. Zool.* 1840, 106. (not Sow. f. 286.)
Pomatias striolatus *Pfeiffer*, l. c. 110. n. 4.
Hab. Europe.

8. POMATIAS SCALARINUS.

Pomatias scalarinus *Villa* in *Pfeiffer*, l. c. 110. n. 8.

9. POMATIAS GRACILIS.

Pomatias gracilis *Kuster*, *Pfeiffer*, l. c. 110. n. 9.

28. REALIA.

Operculum thin, few-whorled, horny.—*Shell* globose, turbinate, or turrited. Aperture oval. Peristome simple, straight, or somewhat expanded, with margins approximated.

Realia *Gray*, *Syn. B. Mus.* 1840, 1844, 91., *Proc. Zool. Soc.* 1847. (Cycl. rubens *Quoy*.)
Hydrocena *Parreyss MS.*? *Pfeiffer* in *Menke und Pfeiffer*, *Z. f. Malak.* 1847.

1. REALIA CATTAROENSIS.

Cyclost. cattaroense *Pfeiffer*, *Wiegm. Archiv.* 1841.
Hydrocena cattaroensis *Pfeiffer*, *Zeitsch.* l. c. 112. n. 1.
Hab. Cattaro.

2. REALIA BELANGERI.

? Cyclost. aurantiacum *Desh. Voy. Belanger*, *Zool.* 416. n. 6. t. 1. f. 16, 17.; *Lamck. An. s. Vert.* 2nd ed. viii. 373. n. 43.
Hydrocena Belangeri *Pfeiffer*, l. c. 112. n. 3.
Hab. Pondicherry.

3. REALIA MINUTISSIMA.

Cyclost. minutissimum *Sow. Zool. Proc.* 1832, *Thes. Conch.* i. 102. n. 33. t. 30. f. 251.
Hydrocena minutissima *Pfeiffer*, l. c. 112. n. 2.
Hab. Pitcairn's Island.

4. REALIA EROSA.

Cyclostoma erosa *Quoy & Gaim. Voy. Astr. Zool.* ii. 191. t. 12. f. 40—44.; *Lamck. An. s. Vert.* 2nd edit. viii. 370. n. 37.

Hydrocena erosa *Pfeiffer*, l. c. 112. n. 4.
Hab. Isle of Guam, Marianne Islands.

5. REALIA RUBENS.

Cyclost. rubens *Quoy & Gaim. Voy. Astr. Zool.* ii. 189. t. 12. f. 36—39.; *Lamck. An. s. Vert.* 2nd edit. viii. 368. n. 34.
Hydrocena rubens *Pfeiffer*, l. c. 112. n. 5.
Hab. Mauritius.

6. REALIA DUBIA.

Hydrocena dubia *Pfeiffer*, l. c. 112. n. 6.
Assaminea sp. *Cuming MS.*

7. REALIA HIEROGLYPHICA.

Hydrocena hieroglyphica *Fér.*; *Pfeiffer*, l. c. 112. n. 7.

8. REALIA OPARICA.

Hydrocena oparica *Pfeiffer*, l. c. 112. n. 8.
Assaminea sp. *Cuming.*

9. REALIA EGEA.

Realia Egea *Gray*, *Proc. Zool. Soc.* 1849.
a. New Zealand. Presented by Dr. A. Sinclair, R. N.
b—d. New Zealand. Presented by Major Greenwood.

29. FERUSSINA.

Ferussina *Grateloup*, *Bull. Soc. Linn. Bord.* ii. 5. 92. 1826? 1827; *Rang*, *Man.* 180. 1829; *Pot. et Mich. Gal.* i. 232. 1833.
Ferussacia *Leufroy*, *Ann. Sci. Nat.* xv. 403. 1828 (not Risso, 1826); *Oken*, *Isis*, 1834, 1036.; *Bronn*, *Lith.* 1013. 1838.
Strophostoma *Desh. Ann. Sc. Nat.* xiii. 1830, *Encyc. Méth.* ii. 51. 832. iii. 998.; *Gray*, *Syn. B. M.* 1842, 91.
Anastoma sp.

1. FERUSSINA ANASTOMÆFORMIS.

Ferussina anastomæformis *Grateloup*, l. c.
Strophostoma lævigata *Desh. Ann. Sc. Nat.* xiii. 286. t. 11 a. f. 1. 4.
Ferussacia lævigata *Bronn*, *Lith.* 1013. 40. *t.* 27.
Fossil.

C. *Uncertain Species.*

1. CYCLOSTOMA VARIEGATUM.

Cyclost. variegatum *Swains. Pfeiffer*, l. c. 112. n. 9.

2. CYCLOSTOMA CINCINNATIENSE.

Cyclost. cincinnatiense *Lea; Pfeiffer*, l. c. 112. n. 1.

3. CYCLOSTOMA MARGINATUM.

Turbo marginatus *Chemn. Conch. Cab.* ix. 60. t. 123. f. 1075. a and b.
Cyclost. marginatum *Pfeiffer*, l. c. 112. n. 5.

4. CYCLOSTOMA RIVULARIS.

Cyclost. rivularis *Eichw.; Pfeiffer*, l. c. 112. n. 7.

5. CYCLOSTOMA LIMBIFERUM.

Cyclost. limbiferum *Menke, Kuster, Chemn. Conch. Cab.* i. 19. t. 21. f. 6.

6. CYCLOSTOMA DENTATUM.

Cyclost. dentatum *Say; Pfeiffer*, l. c. 105. n. 37.

7. CYCLOSTOMA CARNEUM.

Cyclost. carneum *Menke MS. Pfeiffer, Kuster, Chemn. Conch. Cab.* 65. n. 61. i. 19. t. 9. f. 11, 12.
Hab.?

Doubtful Species.

8. CYCLOSTOMA FASCIATA.

Cyclost. fasciata *Lamck. An. s. Vert.* vi. 2nd ed. viii. 358. n. 14., *Enc. Méth.* t. 461. f. 7.; *Desh. Enc. Méth. Vers*, ii. 42. n. 10.
Cyclost. fasciatum *Sow. Thes. Conch.* i. 108, n. 52. t. 24. f. 65.
Helix truncata *Dillw. Cat.* ii. 948. n. 137.
Helix decollata *Chemn. Conch. Cab.* ix. t. 136. f. 1256, 1257.; *Favanne, Conch.* t. 65. f. B. 10.
Hab. St. Domingo.

Fam. II. ACICULIDÆ.

Head with a rather produced aculeated proboscis, truncated at the end. Tentacula subulate. Eyes on the back of the head, between, and rather behind the base of, the tentacula.
Foot oblong, short.
Shell spiral, turrited. Mouth ovate.
Operculum spiral, few-whorled, thin.

Auriculadæ (pars) *Gray, Syn. B.M.* 1840, *Turton's Man.* 2nd ed. 222., *Proc. Zool. Soc.* 1848, 130.
Cyclostomacea (pars) *Pfeiffer, Zeitsch. f. Malak.* 1847, 103.

These animals have been confounded with *Auriculadæ*. Férussac (*Dict. Class. H. N.* ii. 90. 1822) first noticed the operculum, and Mr. Alder has more lately described it.

1. ACICULA.

Operculum very thin, glassy, few-whorled. — *Shell* subimperforate; cylindrical. Peristome rather thickened, with sub-parallel margins joined by a thin callus.

Acicula *Hartmann* in *Steinmuller, Neue Alpina*, i. 205. 215. 1821 (not Risso, 1826, nor Blainv. 1825); *Pfeiffer, Archiv f. Naturg.* i. 228. 1825, in *Menke und Pfeiffer, Z. f. Malak.* 1847.
Auricula (pars) *Draparnaud.*
Carychium *Studer.*
Carychium sp. *Fleming, Brit. Anim.* 1828; *Potiez et Mich. Gal. Moll. Douai.*
Acme *Hartmann*, 1828; *Sturm, Faun.* vi. 37. 1821; *Gray, Turt. Man.* 2nd ed. 222.
Acmea *Gray, Proc. Zool. Soc.* 1847, 180.
Turbo sp. *Montag. B. Shells.*
Bulimus sp. *Turton.*
Cyclostoma sp. *Férussac, Dict. Class. Hist. Nat.* ii. 90.; *Porro; Alder, Moll. North.; Quoy & Gaim. Voy. Astrol.* ii. 186.
Pupula *Agassiz* in *Charpent. Catal.* 22. 1839; *Hartmann, Erd et Süssw. Gasterop.* 1840.
Auricella sp. *Jurine.*

N. B. Acmea *Hartmann* in *Steinmuller, Neue Alpina*, 204. 212., according to Herrmannsen, i. 15., is established on Cyclostoma truncatula *Drap.*, and is synonymous with Truncatella *Risso*. Acmæa of *Eschscholtz* is the Lottia of *Gray*.

1. ACICULA FUSCA.

Turbo fuscus *Walker, Min. Shells*, f. 42.
Auricula lineata *Drap. Moll.* 17. t. 3. f. 20, 21.
Carychium lineatum *Pfeiffer, Syst. Anord.* iii. 43. t. 7. f. 26, 27.; *Rossmass. Iconog.* vi. t. 29. f. 408.
Carychium cochlea *Stud. Syst. Verz.* 21.; *Fér. Prodr.* 104. n. 1.
Carychium acicularis *Férus. Dict. Sc. Nat.* vii. 188. 1817.
Acicula lineata β. polita *Hartm. Neue Alpin.* 215. n. 9.
Acme lineata *Hartm.; Sturm, Faun.*
Bulimus lineatus *Turton, Man.* n. 66.
Carychium fuscum *Flem. Brit. An.* 270. n. 97.
Acicula fusca *Pfeiffer*, l. c. 111. n. 2.

a—z. Copford, Essex. Semifossil. Presented by Miss Alicia Barker.
aa—rrr. Copford, Essex. Semifossil. Presented by S. P. Woodward, Esq.

2. ACICULA SPECTABILIS.

Acicula spectabilis *Rossmass.*; *Pfeiffer*, l. c. 111. n. 1.
Hab.

3. ACICULA STRIATA.

Cyclost. striata *Quoy & Gaim. Voy. Astrol.* ii. 186. t. 12. f. 27.
Hab. Vanikoro, on leaves. *Quoy.*

2. GEOMELANIA.

Animal like Acicula. — *Operculum* horny, ovate, of a few rapidly enlarging whorls. — *Shell* imperforate, turrited. Aperture entire, effused. Peristome simple, expanded; the margins joined, the basal produced into a somewhat twisted tongue-shaped appendix.

Geomelania *Pfeiffer* in *Menke und Pfeiffer, Z. f. Malak.* 1847.

1. GEOMELANIA JAMAICENSIS.

Geomelania jamaicensis *Pfeiffer*, l. c. 111. n. 1.
a—c. Jamaica.

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